POLAR-NOVA-ATHOS-ATHOS POWER_mod.Hydro

UK

MANUAL FOR USE AND INSTALLATION

MCZ S.p.A. - Via G.Oberdan 86, I - 33074 Vigonovo (PN) Italy.

CE 07

EN 14785 - 2006

Art. 15a B-VG - VKF AEAI

Polar / Nova / Athos Power HYDRO

Potencia nominal (agua - aire): **Potência nominal (água - ar):** **Nominal heat output (water - air):** **Brændværdi (vand - luft):**	Max 23,7kW (16,2kW - 7,5kW) Min 6,2kW (3,7kW - 2,5kW)	
Emisión CO (al 13% de O2): **Emissão CO (13% de O2):** **CO emission (at 13% O2)** **CO emission (ved 13% O2):**	P max P min	0,019% 0,055%
Eficiencia: **Eficiencia:** **Efficiency:** **Virkningsgrad:**	P max P min	92,0% 93,0%
Temperadura humos: **Tempretura dos fumos:** **Flue gas temperature:** **Røggastemperatur:**	250 °C	
Presión máxima de agua: **Pressão máxima da água:** **Permissible max. water pressure:** **Max. vandtryk:**	2,5 bar	
Asorbimiento electrico max: **Potência electrica absorbida:** **Max. electrical power supply:** **Max. elektrisk effekt:**	320 W	
Tensión de funcionamiento: **Tensão electrica funcionamento:** **Rated voltage:** **Netspænding:**	230 V - 50 Hz.	
Distancias de seguridad (retro): **Distancia de segurança (trasiera):** **Safety clarence distance (back):** **Sikkerhedsafstand (bag):**	200 mm	
Distancias de seguridad (laterales): **Distancia de segurança (lateral):** **Safety clarence distance (side):** **Sikkerhedsafstand (side):**	500 mm	

Producto conforme a la instalación de tubos múltiples. Produto conforme para instalação em condutas multiplas. Appliance suitable for installation in a shared flue. Apparatet kan bruges i en røggassamleledning.

Utilizar sólo con combustibles adaptados. Utilizar somente combustivel adaquado. Use only recommended fuels. Anvend kun anbefalede brændsler.

Leer y seguir las instrucciones! Leia atentamente e siga as instruções! Leggere e seguire le istruzioni! Read and follow the operating instructions! Følg fabrikantens brugervejledning!

COD: 8900902500

MCZ S.p.A. - Via G.Oberdan 86, I - 33074 Vigonovo (PN) Italy.

CE 07

EN 14785 - 2006

Art. 15a B-VG - VKF AEAI

ATHOS HYDRO

Potencia nominal (agua - aire): **Potência nominal (água - ar):** **Nominal heat output (water - air):** **Brændværdi (vand - luft):**	Max 14,0kW (10,4kW - 3,6kW) Min 4,0kW (1,4kW - 2,6kW)	
Emisión CO (al 13% de O2): **Emissão CO (13% de O2):** **CO emission (at 13% O2)** **CO emission (ved 13% O2):**	P max P min	0,017% 0,045%
Eficiencia: **Eficiencia:** **Efficiency:** **Virkningsgrad:**	P max P min	91,0% 94,0%
Temperadura humos: **Tempretura dos fumos:** **Flue gas temperature:** **Røggastemperatur:**	190 °C	
Presión máxima de agua: **Pressão máxima da água:** **Permissible max. water pressure:** **Max. vandtryk:**	2,5 bar	
Asorbimiento electrico max: **Potência electrica absorbida:** **Max. electrical power supply:** **Max. elektrisk effekt:**	300 W	
Tensión de funcionamiento: **Tensão electrica funcionamento:** **Rated voltage:** **Netspænding:**	230 V - 50 Hz.	
Distancias de seguridad (retro): **Distancia de segurança (trasiera):** **Safety clarence distance (back):** **Sikkerhedsafstand (bag):**	200 mm	
Distancias de seguridad (laterales): **Distancia de segurança (lateral):** **Safety clarence distance (side):** **Sikkerhedsafstand (side):**	100 mm	

Producto conforme a la instalación de tubos múltiples. Produto conforme para instalação em condutas multiplas. Appliance suitable for installation in a shared flue. Apparatet kan bruges i en røggassamleledning.

Utilizar sólo con combustibles adaptados. Utilizar somente combustivel adaquado. Use only recommended fuels. Anvend kun anbefalede brændsler.

Leer y seguir las instrucciones! Leia atentamente e siga as instruções! Leggere e seguire le istruzioni! Read and follow the operating instructions! Følg fabrikantens brugervejledning!

COD: 89008010

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INTRODUCTION

Dear Customer,

We would like to thank you for selecting MCZ products, and particularly for choosing one of the MCZ Pellet range.

We are convinced that as you use it, you will appreciate the quality of the MCZ pellet line, which is the result of careful planning and meticulous testing. Our aim is to combine technological complexity with simplicity of use and, above all, with safety.

In order to get the best performance from your stove and to enjoy to the fullest the warmth and the sense of well-being which the flame will spread through the home, we recommend that you read this booklet carefully before lighting the stove for the first time.

Once you have learnt the basics, you will be able manage to best advantage the various levels of power and the potential for presetting, and you will also pick up a few little hints about cleaning and setting.

While thanking you again, may we remind you that the stove **MUST NOT** be used by children, and that they must always be kept at a safe distance from it!

Revisions to the publication

In order to improve the product, to keep this publication up to date the manufacturer reserves the right to make modifications without any advance notice.

Any reproduction, even in part, of this manual without the consent of the manufacturer is prohibited.

Care of the manual

- Take good care of this manual and keep it in a place which can easily and quickly be reached.
- If this manual should be lost or destroyed, or if it is in poor condition, ask for a copy from your retailer or directly from the manufacturer, providing product identification data.

How to read the manual

- Information which is essential or that requires special attention is shown in **bold text.**
- *"Italic text"* is used to direct the user's attention to explanatory figures, or to ask the user to refer to other sections of the manual for a more detailed explanation.
- **NOTE**: a NOTE provides the reader with additional information on a specific topic.

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These symbols indicate specific messages included in this booklet

	ATTENTION: This warning sign, used at various points in this booklet, indicates that the message to which it refers should be carefully read and understood, because **failure to comply with what these notices say can cause serious damage to the stove and put the user's safety at risk.**
	INFORMATION: This symbol is intended to highlight information important for the proper functioning of the stove. Failure to comply with what these notices say will compromise the use of the stove and is likely to result in unsatisfactory operation.
	OPERATING SEQUENCES: Indicates a sequence of buttons to be pushed to access menus or to make adjustments.
	SEE MESSAGES: This symbol instructs the user to see the messages shown on the control display.

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1. WARNINGS AND GUARANTEE CONDITIONS

1.1. SAFETY INSTRUCTIONS

- **Installation of the stove, making the electrical and plumbing connections, checking its operation, and maintenance are all tasks which should be carried out ONLY by qualified and authorised personnel.**
- **Install the stove in accordance with the regulations in force in your local area, region and country.**
- For the correct use of the stove and of the electronic apparatus connected to it, and to prevent accidents, the instructions given in this booklet must always be followed.
- In addition, adjustment and regulation must be carried out by adults. Errors or incorrect settings can give rise to hazardous conditions and/or bad running.
- Before beginning any operation, the user, or whoever is preparing to operate on the stove, must have read and understood the entire contents of this instruction booklet.
- The stove is to be used only for its intended purpose. Any other use is to be considered improper and therefore hazardous.
- Do not use the stove for standing on or as any kind of support.
- Do not put clothes to dry on the stove Any clothes hangers and the like must be kept a suitable distance from the stove. **Danger of fire.**
- All responsibility for improper use is taken entirely by the user. Such use relieves MCZ of any civil or criminal responsibility.
- Any kind of tampering or unauthorised substitution of non-original spare parts can be hazardous for the safety of the operator and relieves MCZ of any civil or criminal responsibility.
- **Most of the surfaces of the stove are extremely hot (the door, the handle, the glass, smoke discharge pipes etc.). Avoid coming into contact with these parts, therefore, without adequate protective clothing or suitable implements, such as gloves with thermal protection or implements which keep the hands cool.**
- Carefully explain this hazard to elderly people, disabled people and particularly to all children, keeping them away from the stove while it is in operation.
- **Under no circumstances should the stove be operated with the door open or the glass broken.**
- Do not touch the stove with wet hands, in view of the fact that it is an electrical appliance. Always disconnect the supply cable before doing anything to the unit.
- Before carrying out any cleaning or maintenance

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operation, make sure in advance that the stove is disconnected from the mains electricity supply, by turning off the main switch located on the back of the stove, or by unplugging the supply cable.

- The stove must be connected to an electrical system which is equipped with an earth conductor, as set forth in directives 73/23 EEC and 93/98 EEC.
- The system must be of adequate rated capacity for the stated electrical power of the stove.
- Incorrect installation or faulty maintenance (not conforming to the requirements set out in this booklet) can cause harm to people, animals or property. In such cases MCZ is relieved of any civil or criminal responsibility.

1.2. OPERATING WARNINGS

- Shut the stove down in the event of a breakdown or bad running.
- Pellets must not be fed manually into the burner.
- **Accumulated unburnt pellets in the burner after repeated failed ignitions must be removed before lighting.**
- Do not wash the inside of the stove with water.
- Do not wash the stove with water. The water could get inside the unit and damage the electrical insulation and cause electric shocks.
- Do not expose your body to hot air for extended periods. Do not overheat the room you are in and where the stove is installed. This could cause injuries and health problems.
- Do not expose plants or animals directly to a current of hot air. Both plants and animals could be harmed by it.
- Do not put anything in the hopper other than wood pellets.
- Install the stove in a location which is suitable for for fire protection, and equipped with all services such as air and electricity supply and provision for discharging combustion gases.
- If there is a fire in the flue pipe, extinguish the stove, disconnect it from the power supply and never open the door. Then contact the competent authorities.
- If the stove and the ceramic cladding are in storage, it should be in a place that is free of damp, and they should not be exposed to extremes of temperature.
- It is inadvisable to base the stove directly on the floor, and if the floor is made of flammable material, it must be suitably insulated.
- Do not light the stove with flammable materials if the ignition system breaks down.

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INFORMATION

- In case of any problems, get in touch with your dealer, or qualified personnel authorised by MCZ. If repair is necessary, insist on the use of original spare parts.
- Use only the fuel recommended by MCZ (for Italy pellets with a diameter of 6 mm and for other European countries with a diameter of 6-8 mm) and provided only with an automatic supply system.
- Periodically check and clean the smoke outlet ducts (connection to the flue pipe).
- Accumulated unburnt pellets in the burner after repeated failed ignitions must be removed before lighting.
- The pellet stove is not a cooking appliance.
- Always keep the cover of the fuel hopper closed.
- Keep this instruction manual carefully because it must stay with the stove throughout its working life. If the stove is sold or transferred to another user, always make sure that the booklet goes with the product.
- If it gets lost, ask MCZ or your authorised dealer for another copy.

1.3. GUARANTEE CONDITIONS

MCZ guarantees the stove, **excluding the components which are subject to normal wear**, for a period of two years from the date of purchase, as proved by a supporting document which gives the name of the vendor and the date on which the sale took place. The guarantee is conditional on the guarantee certificate being filled in and returned within 8 days, and requires that the product be installed and tested by a specialised installer, according to the detailed instructions given in the instruction booklet supplied with the product.

The term 'guarantee' is to be understood to denote the free-of-charge replacement or repair of **parts recognised to have been defective at the start by reason of manufacturing defects.**

1.3.1. Limitations

The above guarantee does not cover components relating to electrical and electronic parts, or fans, on which the guarantee period is 1 year from the purchase of the product, documented as specified above. The guarantee does not cover parts subject to normal wear such as gaskets, glass, and any parts with can be removed from the firebox.

The replacement parts will be guaranteed for the remainder of the guarantee period starting from the date of purchase of the product.

1.3.2. Exceptions

Variations in colour in the painted or ceramic parts, and crackling of the glaze on the ceramics, do not constitute grounds for a claim under the guarantee, as they are natural characteristics of the material and of the use of the product.

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The guarantee does not cover any parts which may be found to be faulty as a result of negligence or carelessness in use, or of incorrect maintenance, or of installation not complying with MCZ's specification (see the relevant chapters in this user manual).

MCZ refuses to accept any responsibility for any damage which may be caused, directly or indirectly, by persons, animals or things as a result of the failure to observe all the prescriptions laid down in the instruction booklet, especially those concerning warnings on the subject of installation, use and maintenance of the appliance.

If the product does not perform correctly, contact your local retailer and/or importer.

Damage caused by transport and/or handling is excluded from the guarantee.

For installation and use of the product, reference must be made exclusively to the booklet supplied.

The guarantee will be invalidated in the event of damage caused by tampering with the appliance, atmospheric agents, natural disasters, electrical discharges, fire, defects in the electrical system, and lack of, or incorrect, maintenance in terms of the manufacturer's instructions.

CLAIMS UNDER THE GUARANTEE

The request for action under the guarantee must be addressed to the retailer, who will forward the claim to MCZ's technical assistance service.

MCZ DECLARES THAT THE STOVE WHICH YOU HAVE PURCHASED COMPLIES WITH EEC DIRECTIVE 89/336 AND 72/23 AND SUBSEQUENT AMENDMENTS.

MCZ shall not be held liable if the stove or any other accessory have been improperly used or modified without authorisation.

For all replacement of parts, only original MCZ spare parts must be used.

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2. THEORETICAL NOTIONS FOR INSTALLATION

2.1. PELLETS

Wood pellets are manufactured by hot-extruding compressed sawdust which is produced during the working of natural dried wood. The compactness of the material comes from the lignin which is contained in the wood itself, and allows the production of pellets without the use of glues or binders.

Figure 1 - Pellet fuel

The market offers different types of pellet with characteristics which vary depending on what mixture of woods is used. The diameter varies between 6 mm and 8 mm, with a standard length in the range 5 mm to 30 mm. Good quality pellets have a density which varies between 550 kg/m^3 to over 700 kg/m^3, with a moisture content which varies from 5% to 8% by weight.

With the aim of guaranteeing the stated rate of fuel consumption per hour and ensuring optimum combustion, MCZ has devised a patented method which allows the identification and cataloguing of any type of pellet with a 6 mm and 8 mm diameter, in terms of its specific gravity and particle size.

By using the special PelletBox® and following the procedure set out in the paragraph on lighting the stove, the user can determine the correct settings for configuring the stove.

Figure 2 - PelletBox®

Besides being an ecological fuel (exploiting timber residues to the maximum and achieving cleaner combustion than is possible with fossil fuels), pellets also have technical advantages. While good-quality timber has a calorific power of 4.4 kW/kg (with 15% moisture, after about 18 months' seasoning), the equivalent figure for pellets is 5.3 kW/kg.

To ensure good combustion, the pellets must be stored in an area that is free of humidity and protected from dirt. The pellets are usually supplied in 15 kg. sacks, so storing them is very convenient.

Good quality pellets ensure good combustion, thus lowering the emission of harmful agents into the atmosphere.

Figure 3 - Sack of fuel, 15 kg

The poorer the quality of the fuel, the more frequently will intervention be necessary for cleaning the internal parts, such as the grate and the combustion chamber.

The pellets must be produced from pure wood which has not been treated chemically.

The standards DIN 51731 and ONORM M 7135 certify a high-quality pellet with the following characteristics:

- ✓ Calorific power: 5.3 kW/kg
- ✓ Density: 700 kg/m^3
- ✓ Water content: max 8% of weight
- ✓ Percentage of ashes: max 1% of weight

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- ✓ Diameter: 6 – 6.5mm
- ✓ Length: max 30mm
- ✓ Contents: 100% untreated wood, with no added bonding substances (bark percentage 5% max)
- ✓ Packaging: in sacks made from ecologically compatible or biologically decomposing material

MCZ strongly recommends using certified fuel in its stoves.

The use of fuel of inferior quality or not conforming to the specification given above compromises the running of your stove and can therefore lead to the termination of the guarantee and of the manufacturer's responsibility for the product.

MCZ pellet stoves run exclusively on pellets with a diameter of 6 mm (only for Italy) and 6-8 mm (European countries) with lengths that go from 5 mm to 30 mm.

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2.2. OPERATING AREA

For proper functioning and good temperature distribution, the stove should be positioned in a location where it is able to take in the air necessary for combustion of the pellets (about 40 m^3/h must be available), as set forth in the standard governing the installation and in accordance with local national standards.

The volume of the room must not be less than 30 m^3.

The air must come in through permanent openings made in walls (in proximity to the stove) which give onto the outside, with a minimum cross-section area of 100 cm^2.

These openings must be made in such a way that it is not possible for them to be obstructed in any way.

Alternatively, the air can be taken from rooms adjacent to the one which needs ventilating, as long as they are provided with an air intake from the outside, and are not used as bedrooms or bathrooms, and provided there is no fire risk such as there is for example in garages, woodsheds, and storerooms, with strict compliance with the provisions of current standards.

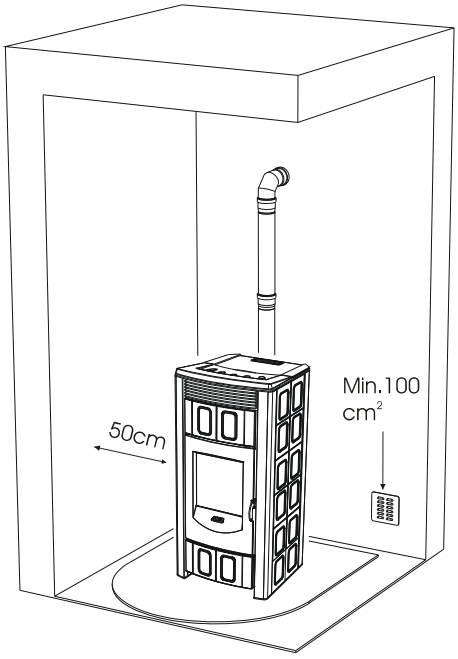

Figure 4 - Example of installation with Polar stove

It is not permissible to install the stove in bedrooms, bathrooms or showers, or in a room where another heating appliance is installed (fireplace, stove etc.) which does not have its own independent air intake.

Locating the stove in a room with an explosive atmosphere is prohibited.

The floor of the room where the stove is to be installed must be strong enough to support its weight.

If the walls are not flammable, position the stove with a clearance to the rear of at least 10 cm.

In the case of walls made of flammable material, maintain a minimum clearance to the rear of 20 cm, a clearance to the sides of 50 cm, and a clearance to the front of 150 cm. If the room contains objects which are believed to be particularly delicate, such as curtains, sofas and other furniture, their distance from the stove should be considerably increased.

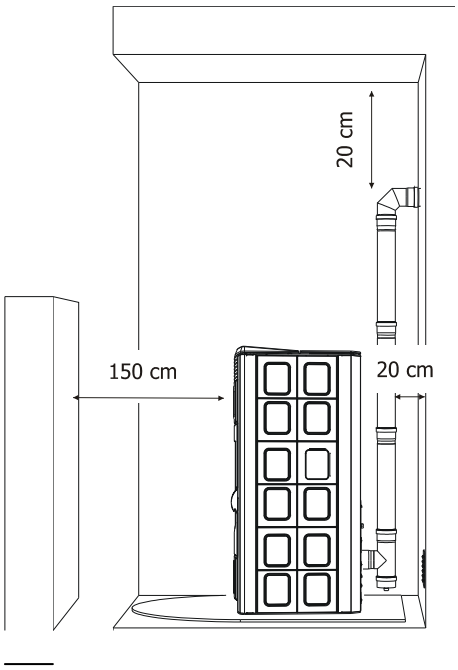

Figure 5 - Example of installation with Polar stove

If the flooring is made of wood, provide a floor protection surface in compliance with current national standards.

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2.3. PRECAUTIONS

IMPORTANT!

Installation and assembly of the stove must be carried out by qualified personnel.

The stove must be installed in a suitable position to allow the normal operations of opening and ordinary maintenance.

The site must be:

- capable of providing the environmental conditions for operation
- equipped with power supply 230V 50 Hz (EN73-23)
- capable of taking an adequate system for smoke discharge
- provided with external ventilation
- provided with an earth connection complying with CEI 64-8

The stove must be connected to a flue pipe or an internal or external vertical duct conforming to current standards UNI 7129 - 7131 9615.

The stove must be positioned in such a way that the electrical plug is accessible.

IMPORTANT!

The stove must be connected to a flue pipe or a vertical duct which can discharge the fumes at the highest point of the building.

The fumes are however derived from the combustion of wood products, and if they come into contact with or close to walls, they can make dirty marks.

Also take care because the fumes are very hot but almost invisible, and can cause burns on contact.

The holes for the passage of the smoke pipe and for the intake of air from outside should be made before positioning the stove unit.

2.4. CONNECTION TO THE EXTERNAL AIR INTAKE

It is essential that at least as much air must be able to flow into the room where the stove is installed as is required for proper combustion in the appliance and for the ventilation of the room. This can be effected by means of permanent openings in the walls of the room to be ventilated, which give onto the outside, or by single or collective ventilation conduits.

For this purpose, on the external wall near the stove, a hole must be made with a minimum free cross-section of 100 cm². (equivalent to a round hole of 12 cm diameter or a square hole 10x10 cm), protected by a grille on the inside and the outside.

The air intake must also:

- communicate directly with the room where the stove is installed
- be protected by a grille, metal mesh or suitable guard, as long as this does not reduce the cross-section below the minimum.
- be positioned in such a way as to be impossible to obstruct

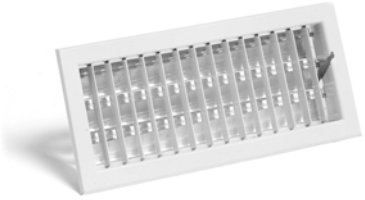

Figure 6 – Air intake grille

It is not compulsory to connect the air inlet of the stove directly with the exterior, but an air flow must be guaranteed of at least 50 m³/h. Refer to current standards.

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2.5. CONNECTION OF SMOKE DISCHARGE PIPE

When making the hole for the passage of the smoke discharge pipe, it is necessary to take into account the possible presence of flammable materials. If the hole will be going through a wall made of wood or any other material which is sensitive to heat, the **INSTALLER MUST** first of all use the special wall union (diam. 13cm minimum) and properly insulate the pipe of the stove that passes through it, using adequate insulation materials (thickness 1.3 - 5cm with minimum thermal conductivity of 0.07 W/m°K).

The same is true if the stove pipe must run through vertical or horizontal stretches passing in proximity (min. 20cm) to the heat-sensitive wall.

As an alternative we recommend the use of insulated pipe, which can also be used on the outside to avoid condensation.

The combustion chamber works in low pressure. The smoke duct for the discharge of fumes will also be under low pressure when connected to an efficient flue pipe as directed.

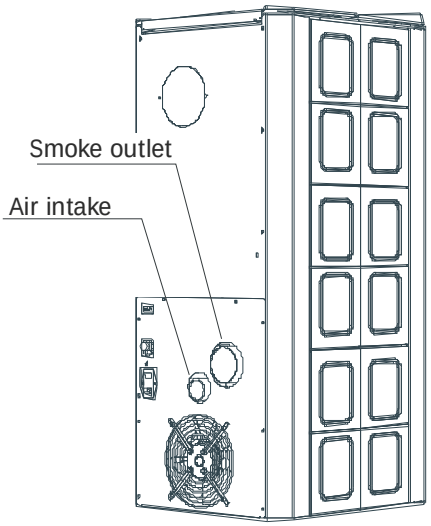

Figure 7 – Back of POLAR/NOVA stove

Pipes and unions with suitable gaskets must always be used, to guarantee a hermetic seal.

All sections of the smoke duct must be inspectable and removable to enable periodic internal cleaning. Tee connectors with inspection caps should be used.

Position the stove bearing in mind all the instructions and considerations above.

IMPORTANT!

All 90 degree changes of direction in the flue pipe must be fitted with suitable tee connectors to allow the possibility of inspection (see the pellet stove accessory list).

It is absolutely prohibited to fit a grille on the end of the smoke discharge pipe, because it could lead to poor operation of the stove.

FOR CONNECTION TO THE FLUE PIPE, NOT MORE THAN 2-3 METRES OF HORIZONTAL PIPE MUST BE USED AND NOT MORE THAN THREE 90° CURVES MUST BE USED

NOT ADVISABLE TO EXCEED A LENGTH OF 6 LINEAR METRES OF PIPE Ø 80 mm.

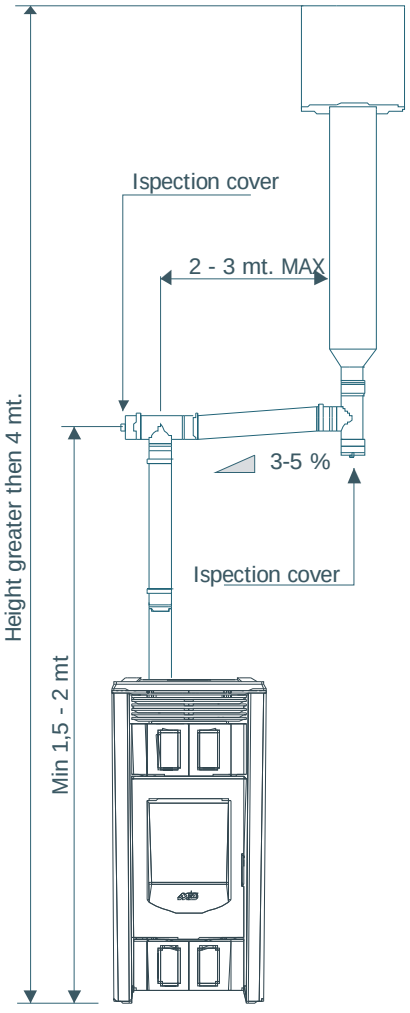

Figure 8 – Example of installation of POLAR/NOVA stove

THE DIRECT DISCHARGE OF THE COMBUSTION PRODUCTS MUST BE PROVIDED ON THE ROOF, AND THE SMOKE DUCT MUST SATISFY THE SPECIFICATIONS PROVIDED FOR BY CURRENT LAWS AND STANDARDS ON THE SUBJECT (UNI 10683)

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2.6. CONNECTION TO THE FLUE PIPE

The flue pipe must have internal dimensions not larger than 20 x 20 cm, or diameter 20 cm. In the event of larger dimensions, or of the flue pipe being in poor condition (for example cracks, poor insulation, etc.), it is advisable to fit a stainless steel pipe of suitable diameter inside the flue pipe throughout its length, right up to the top. *Figure 9*

Check with suitable instruments that there is a minimum draught of 10 Pa.

At the bottom of the flue pipe, provide an inspection cap to allow periodic checking and cleaning, **which must be done annually.**

Make a gas-tight connection to the flue pipe, using pipes and connectors as recommended by us.

You must ensure that a windproof cowl is fitted which complies with current standards.

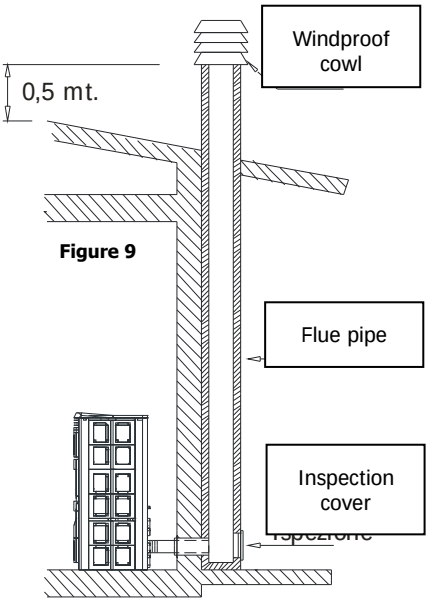

Figure 9

This type of connection ensures the evacuation of the fumes even in the event of a temporary power outage.

2.7. CONNECTION TO AN EXTERNAL FLUE WITH INSULATED OR DOUBLE-WALL PIPE

The external fluepipe must have internal dimensions of minimum 10x10 cm or 10 cm diameter, and maximum 20x20 cm or 20 cm diameter.

Check with suitable instruments that there is a minimum draught of 10 Pa. *Figure 10*

The only type of pipe which is permissible is insulated (double-walled) stainless steel, smooth on the inside, fixed to the wall. Flexible stainless steel pipe must not be used.

At the bottom of the flue pipe, provide an inspection cap to allow periodic checking and cleaning, **which must be done annually.**

Make a gas-tight connection to the flue pipe, using pipes and connectors as recommended by us.

You must ensure that a windproof cowl should be fitted which complies with the standards in force.

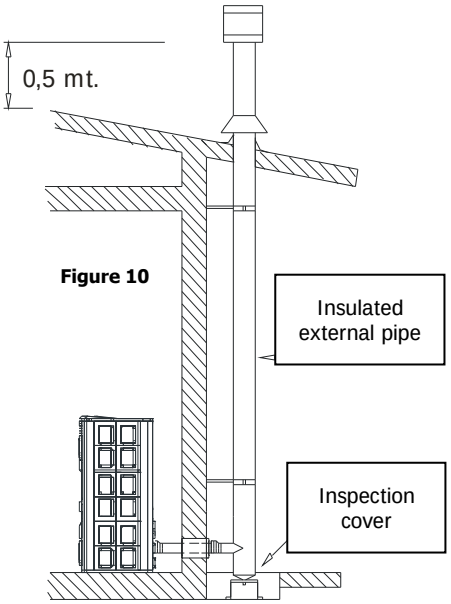

Figure 10

This type of connection ensures the evacuation of the fumes even in the event of a temporary power cut.

2.8. CONNECTION TO FLUE PIPE OR SMOKE DUCT

For proper operation, the connection between the stove and the flue pipe or smoke duct must have a slope of not more than 3%. The length of the horizontal segment **must not exceed 2/3 m**. and the vertical distance between one tee connector and another (change of direction) must not be less than 1.5m.

Check with suitable instruments that there is a minimum draught of 10 Pa. *Figure 11*

At the bottom of the flue pipe, provide an inspection cap to allow periodic checking and **cleaning, which must be done annually.**

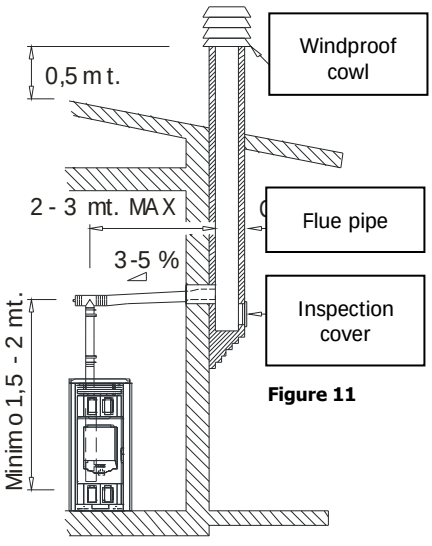

Figure 11

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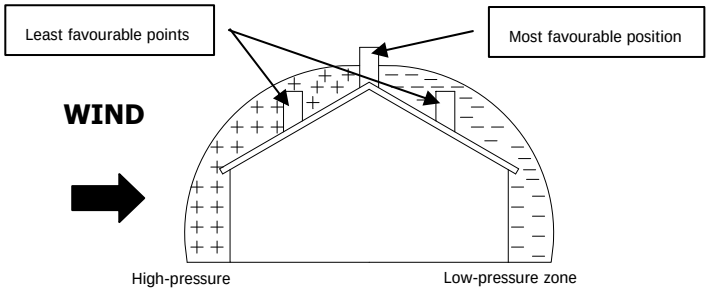
Make a gas-tight connection to the flue pipe, using pipes and connectors as recommended by us.

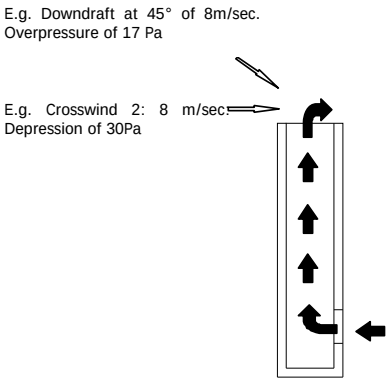
You must ensure that a windproof cowl is fitted which complies with current standards.

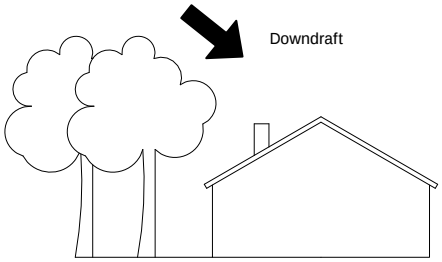
This type of connection ensures the evacuation of the fumes even in the event of a temporary power cut.

2.9. OPERATING PROBLEMS CAUSED BY DRAUGHT DEFECTS IN THE FLUE

Of all the weather and geographical conditions which affect the operation of a flue pipe (rain, fog, snow, altitude a.s.l., exposure to sunlight, direction of facing), the **wind** is unquestionably the most decisive. In fact, along with thermal depression caused by the difference in temperature inside and outside of the chimney, there is another type of depression or over-pressure: dynamic pressure caused by the wind. An updraft always increases depression and hence draught. A crosswind increases depression provided the cowl has been installed properly. A downdraft always decreases depression, at times inverting it.

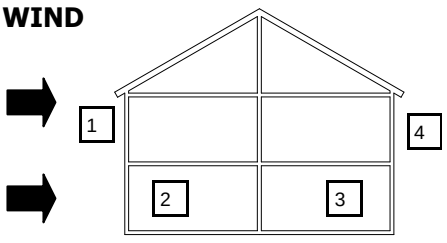






Besides the direction and force of the wind, the position of the flue and the cowl with respect to the roof of the building and the surrounding landscape is important.

The wind also influences the operation of the chimney indirectly by creating high-pressure and low-pressure zones, not only outside the building but inside as well. In rooms directly exposed to the wind **(2)**, an indoor high-pressure area can be created which can augment the draught in stoves and fireplaces, but it can be counteracted by the external high pressure if the cowl is situated on the side exposed to the wind **(1)**. On the other hand, in the rooms on the opposite side from the direction of the wind **(3)**, a dynamic depression can be created which competes with the natural thermal depression developed by the chimney, but this can be compensated for (sometimes) by locating the flue on the opposite side from the direction of the wind **(4).**



1-2 = High-pressure zones

3-4 = Low-pressure zones

IMPORTANT!

The operation of the pellet stove is noticeably sensitive to the conformation and position of the flue which is adopted.

Hazardous conditions can only be overcome by suitable setting-up of the stove carried out by qualified MCZ personnel.

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2.10. PLUMBING CONNECTION

IMPORTANT!

The connection of the stove to the plumbing system must be carried out ONLY by specialized personnel who are capable of carrying out installation properly, in compliance with current standards in the country of installation.

If installation of the stove will involve interaction with another, pre-existing system complete with heating equipment (gas boiler, methane boiler, fuel oil boiler, etc.), it is even more advisable to call in qualified personnel, who subsequently will be responsible for conformity of the system with current applicable law.

MCZ will not be held responsible for damage to persons or things in the event of failed or incorrect operation if the aforementioned warnings are not complied with.

For connection of the plumbing system to the stove, the user should refer to chapter 3, INSTALLATION AND ASSEMBLY; specifically, paragraph 3.4, CONNECTION TO PLUMBING SYSTEM

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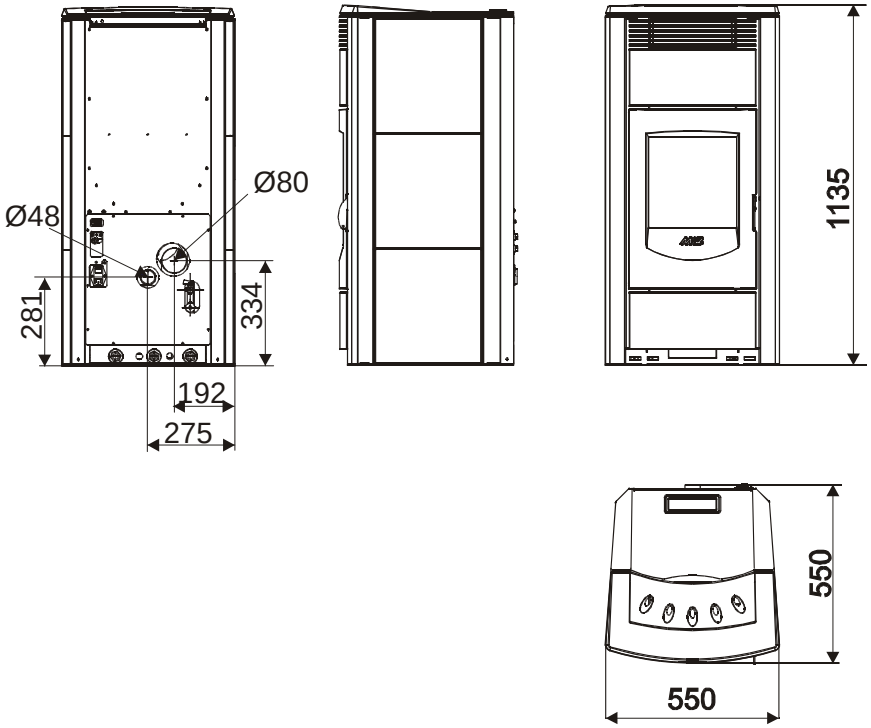
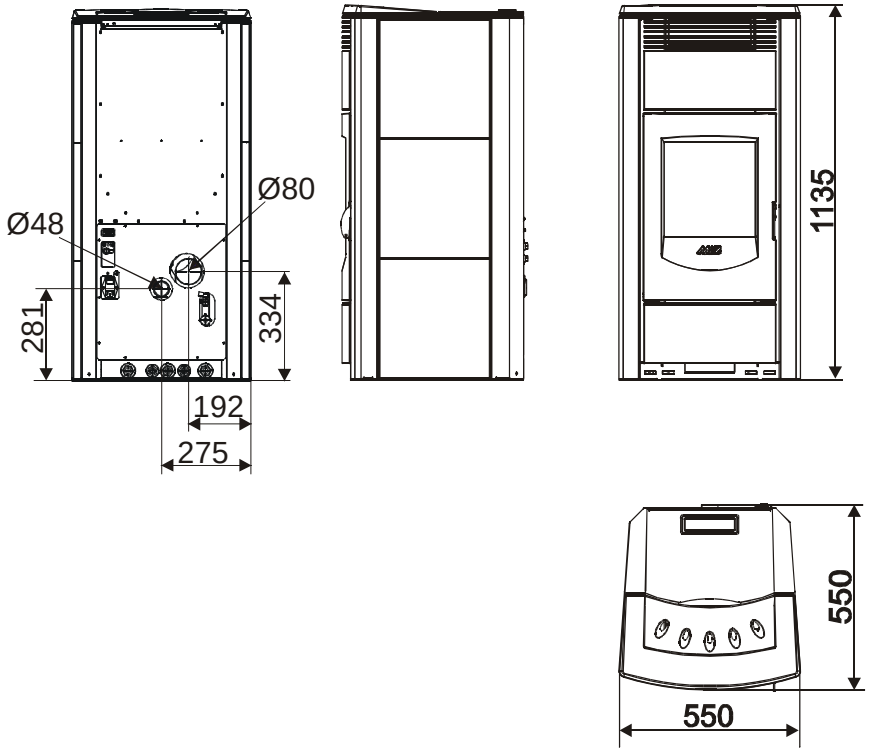
3. INSTALLATION AND ASSEMBLY

3.1. DRAWINGS and TECHNICAL CHARACTERISTICS

3.1.1. Dimensions of POLAR-NOVA in HYDRO version with no kit for the production of domestic hot water



3.1.2. Dimensions of POLAR-NOVA in HYDRO version with kit for the production of domestic hot water



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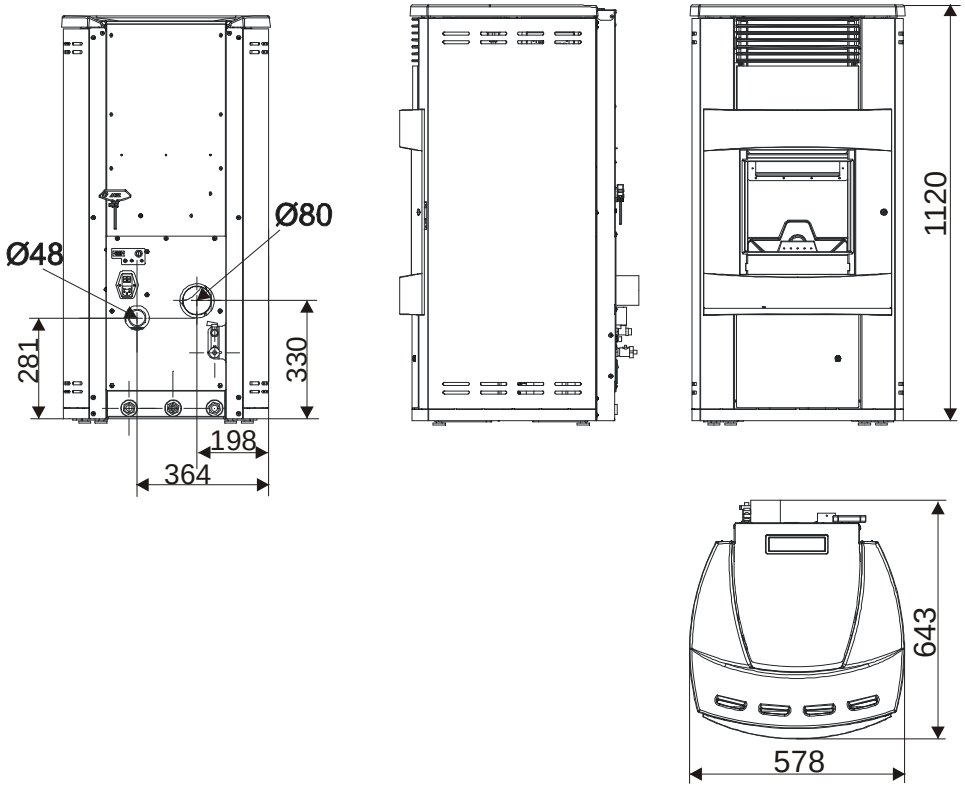
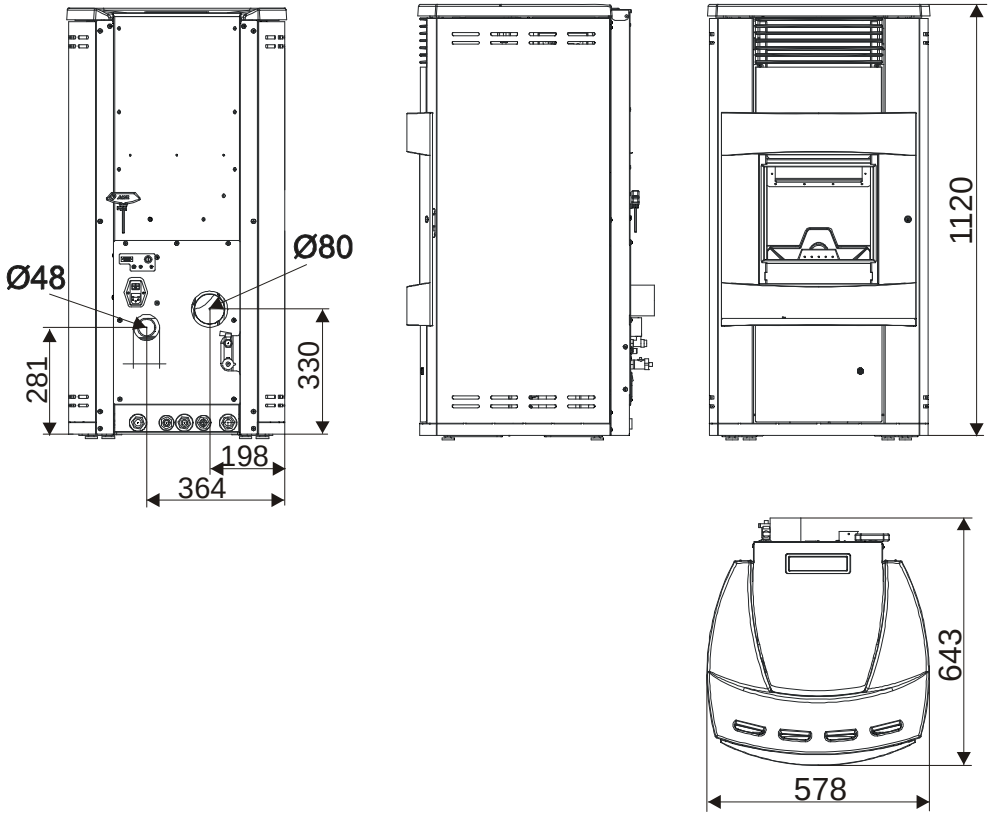
3.1.3. Dimensions of ATHOS POWER in HYDRO version with no kit for the production of domestic hot water



3.1.4. Dimensions of ATHOS POWER in HYDRO version with kit for the production of domestic hot water



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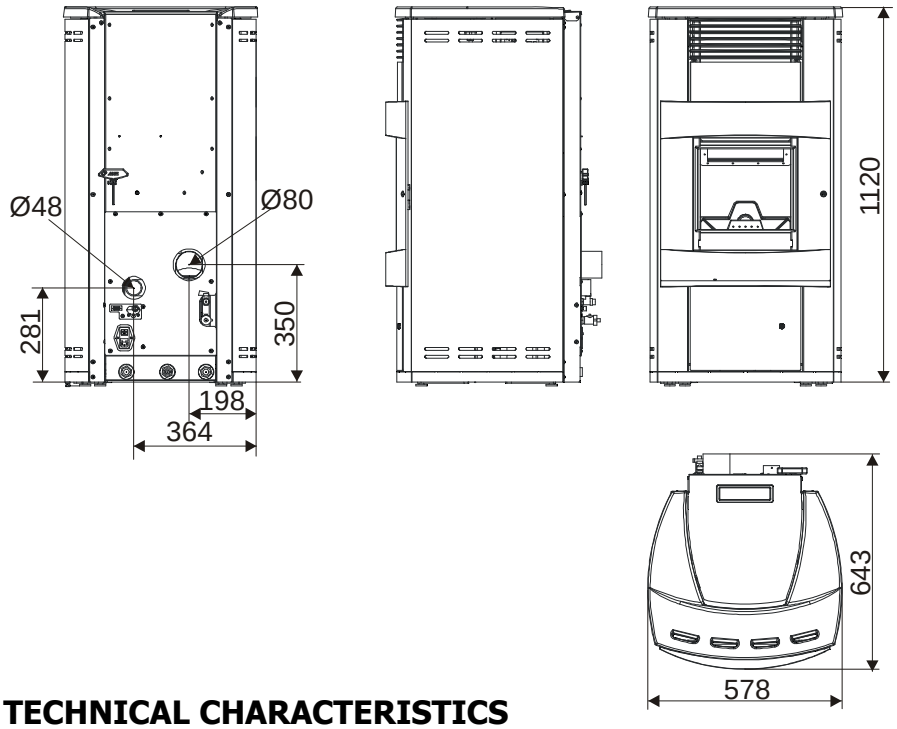
3.1.5. ATHOS HYDRO Dimensions



3.1.6. TECHNICAL CHARACTERISTICS

Technical specifications	Athos Hydro
Overall thermal power Max.	14.0 kW (12040 kcal/h) / 10.4 kW (8944 kcal/h)
Overall thermal power Min.	4.0 kW (3440 kcal/h) / 1.4 kW (1204 kcal/h)
Yield at maximum	91 %
Yield at minimum	94 %
Temperature of exhaust smoke at maximum	190°C
Temperature of exhaust smoke at minimum	90°C
CO at 13%O_2 at minimum and maximum	0.045 — 0.017%
CO_2 at minimum and maximum	3.4% – 5.9%
Mass of smoke at minimum and maximum	8.3 – 16,7 g/sec
Minimum draught at maximum power	0.10 mbar – 10 Pa
Minimum draught at minimum power	0.05 mbar – 5 Pa
Hopper capacity	52 litres
Fuel pellet type	Pellet diameter 6-8 mm. Length range 5-30 mm
Pellet consumption per hour	Min ~ 0.8 kg/h * Max. ~ 3 kg/h *
Operating time between re-fuelling	At min~ 43 h * At max. ~ 12 h *
Heatable volume m^3	301/40 – 344/35 – 401/30 **
Combustion air inlet	External diameter 50 mm.
Smoke outlet	External diameter 80 mm.
Maximum absorbed electrical power	Max 300 W – Med 120 W
Power supply frequency and voltage	230 Volts / 50 Hz
Net weight	200 kg
Weight with packaging	210 kg

*Data that may vary depending on the type of pellets used.

**Heatable volume based on demand of cal/h for m^3 40-35-30 (respectively 40-35-30 Kcal/h for m^3)

Appliance suitable for installation in a shared flue.

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Technical characteristics	Polar Nova Athos Power Hydro
Overall thermal power (total/water) Max.	23.7 kw (20382 kcal/h) / 16.2 kw / 7.5 kw
Overall thermal power (total/water) Min.	6.2 kw (5332 kcal/h) / 3.7 kw / 2.5 kw
Yield at maximum	92 %
Yield at minimum	93 %
Temperature of exhaust smoke at maximum	250°C
Temperature of exhaust smoke at minimum	100°C
CO at 13%O_2 at minimum and maximum	0.055 — 0.018%
CO_2 at minimum and maximum	5.5% – 11.9%
Mass of smoke at minimum and maximum	7.3 – 13 g/sec
Minimum draught at maximum power	0,10 mbar – 10 Pa
Minimum draught at minimum power	0,05 mbar – 5 Pa
Hopper capacity	52 lt
Fuel pellet type	Pellet diameter 6-8 mm. Length range 5-30 mm
Pellet consumption per hour	Min ~ 1 kg/h * Max. ~ 5 kg/h *
Operating time between re-fuelling	At min~ 33 h * At max. ~ 7 h *
Heatable volume m^3	510/40 – 582/35 – 679/30 **
Combustion air inlet	Ø 50 mm.
Smoke outlet	Ø 80 mm.
Maximum absorbed electrical power	Max 320 W – Med 120 W
Power supply frequency and voltage	230 Volt / 50 Hz
Net weight	200 Kg.
Weight with packaging	210 Kg.

*Data that may vary depending on the type of pellets used.

**Heatable volume based on demand of cal/h for m^3 40-35-30 (respectively 40-35-30 Kcal/h for m^3)

Appliance suitable for installation in a shared flue.

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3.2. PREPARATION AND UNPACKING

Polar and Nova stoves are delivered in two packages:

- ✓ The first contains the stove unit (*Figure 1*)
- ✓ The second contains the ceramic cladding. (*Figure2*)

Figure 1 – Example of stove packaging

The **Athos** stove is delivered only with the packaging in fig. 1.

Open the packaging, take off the bands, remove the stove unit from the pallet and position it in the chosen location, taking care that its position complies with the above instructions.

The main stove unit must always be moved in an upright position and a trolley must always be used. Take particular care to see that the door and its glass are protected from mechanical impact which could damage them.

Moving the product must always be done with care.

If possible, unpack the stove in the area where it is going to be installed.

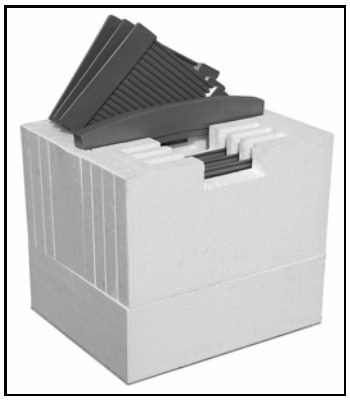


Figure 2 - Example of packing for ceramics

The materials which make up the packaging are not toxic or harmful, so no special procedures for disposal by required.

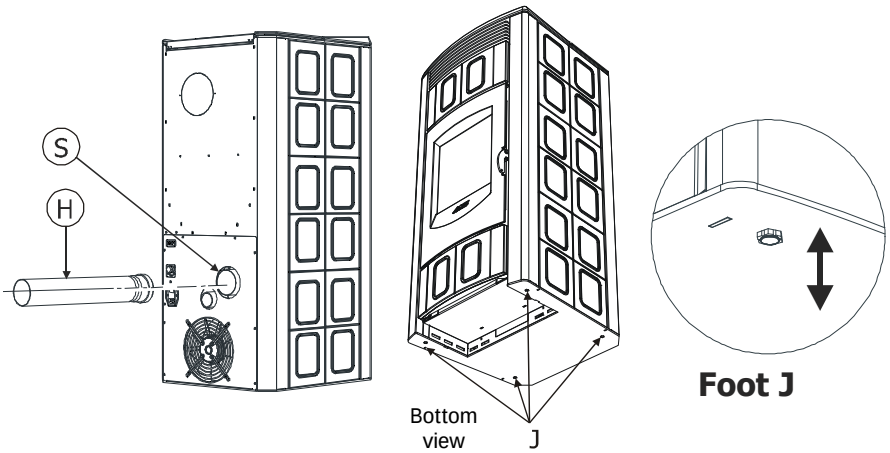
Their storage, disposal or possible recycling are therefore the responsibility of the final user, in compliance with current legislation on the subject.

Do not store the stove unit or its cladding without their packaging.

If the stove needs to be connected to a discharge pipe which goes through the rear wall (to connect up with the flue), take the greatest care to make sure that the joint is not stressed.

If the smoke outlet of the stove is forced or used improperly to lift it or position it, the operation of the stove can be damaged irreparably.

Use the four adjustable feet **(J)** to get the stove correctly levelled so that the smoke outlet **(S)** is lined up with the connecting pipe **(H)**. Adjustment ranges from a minimum of 12 mm to a maximum of 23 mm.



1. Turn the foot clockwise to lower the stove
2. Turn the foot counter-clockwise to raise the stove

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3.3. INSTALLATION OF CERAMIC CLADDING FOR POLAR AND NOVA

3.3.1. Installation of upper panel

Remove the two pre-installed nuts in the upper part of the frame. Take the upper panel, open the hinge and install it, using the two screws welded onto the frame, which you freed when you removed the nuts. Check the alignment of the panel and tighten the nuts *Figure 3*

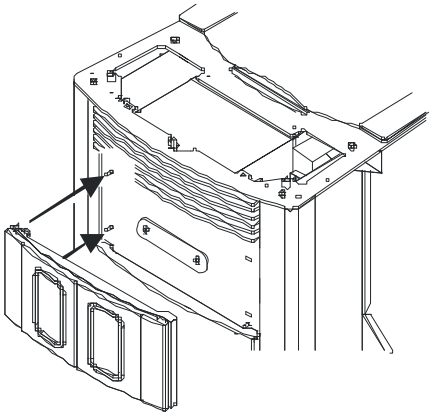

Figure 3 – Installation of upper front panel

3.3.2. Installation of lower panel

Remove the two pre-installed nuts in the lower part of the frame alongside the ash compartment door. Take the lower panel, open the hinge and install it, using the two screws welded onto the frame, which you freed when you removed the nuts. Check the alignment of the panel and tighten the nuts. *Figure 4*

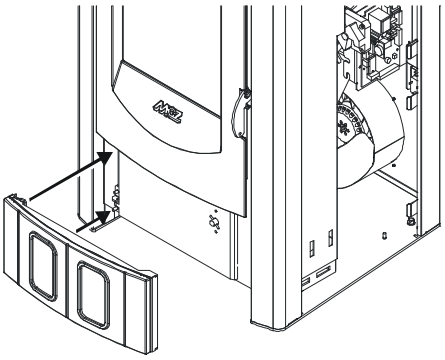

Figure 4 – Installation of lower front panel

3.3.3. Installation of side tiles

INSTALLATION OF THE TILES MUST ALWAYS START FROM THE BOTTOM.

1. Turn the screw **K** so that the rod **H** comes into contact with the structure. *Figure 5 - phase 1*
2. Insert the tile first from the side of the rod **H**, and then insert the opposite part in the housing in the fixed hooks **G**. *Figure 6 - phase 1*
3. Turn the tile towards the exterior of the stove so that the front edge that remains free rests on the upright. *Figure 6 - phase 2*
4. Repeat steps 1-2-3 for all the tiles of the side. *Figure 6 - phase 3*
5. Turn the screw **K** so that the connected rod **H** pushes the tile towards the upright. Use another wrench to tighten nut **L** to permanently secure the system. *Figure 6 - phase 4*
6. Repeat the operations described on the other side.

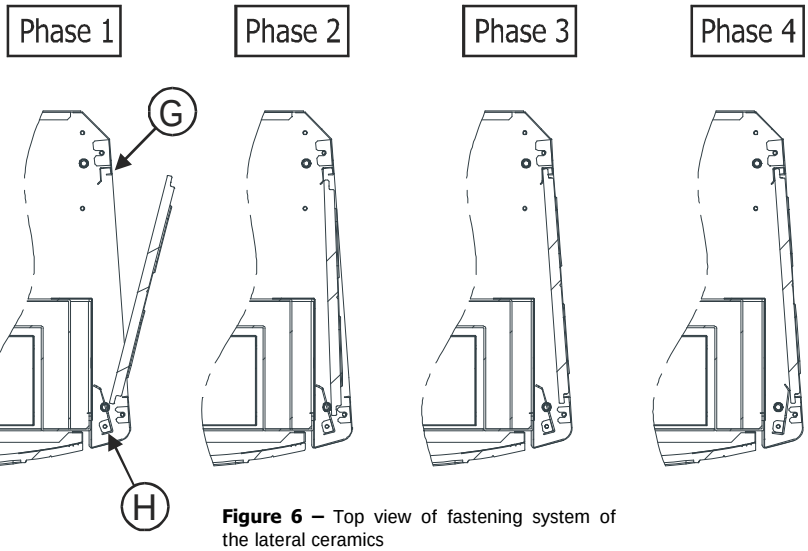

Figure 6 – Top view of fastening system of the lateral ceramics

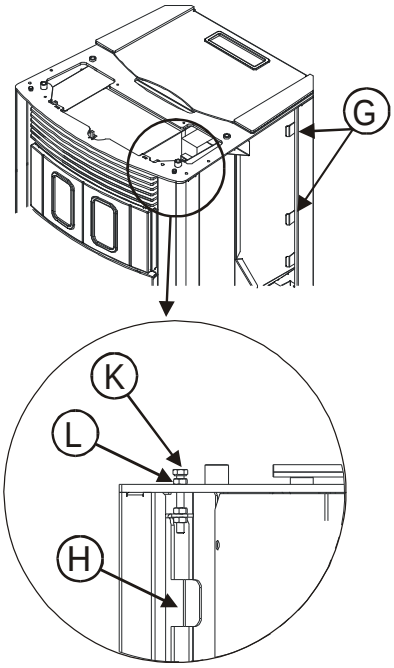

Figure 5 – Side view of the fastening system of the lateral ceramics

Legend for Figures 5 and 6

G - Rear fixed hooks
H - Front blocking rod
L - Blocking nut
K - Blocking screw

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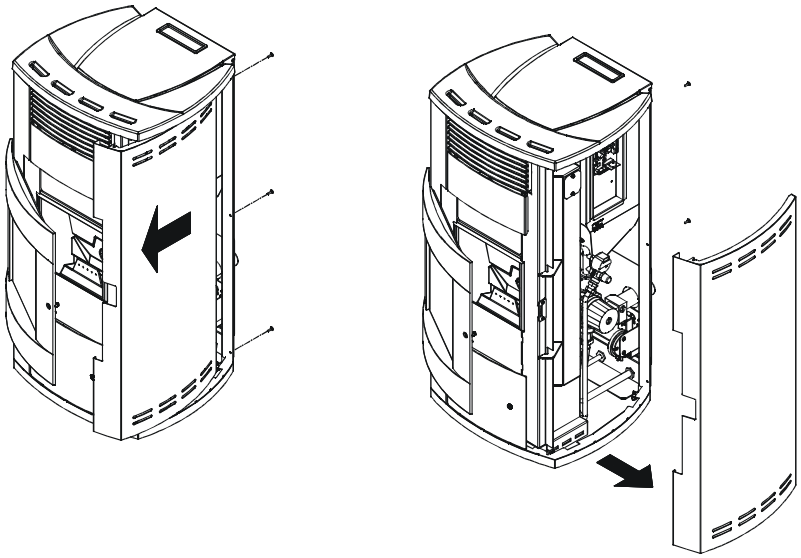
3.3.4. Removal of sides on the ATHOS stove

The stove, in its packaging, already has the metal sides and the ceramic top installed.

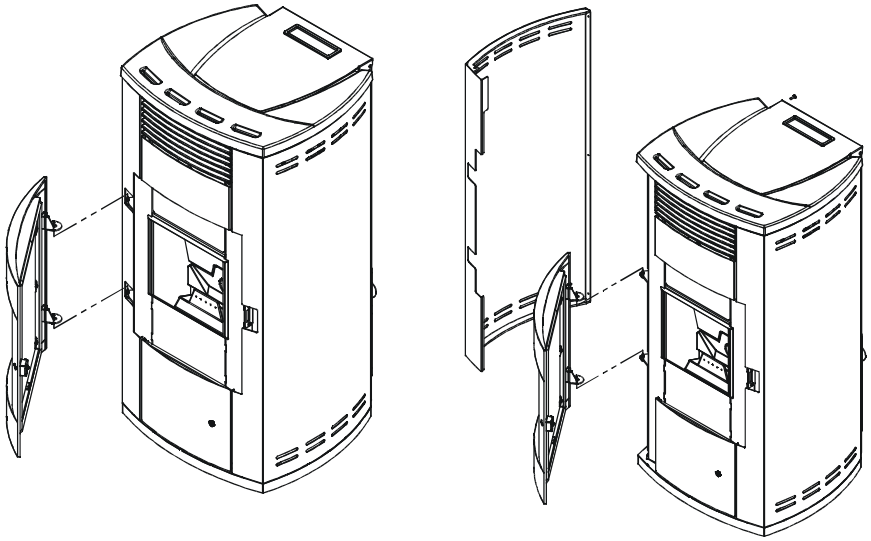
For any servicing the stove may require (see the following paragraphs), you can remove the sides.

The right side is removed towards the front of the stove and then it moves laterally towards the right side as shown in the figure.

Before removing the left side, you must lift the door up and remove it, and then proceed as with the right side.



Removal of right side of ATHOS stove



Removal of left side of ATHOS stove

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3.3.5. Installation of ceramic top

Install the top by setting it on the four upper protuberances of the stove. The part underneath is provided with four small cavities at the rubber supports indicated in *figure 11.*

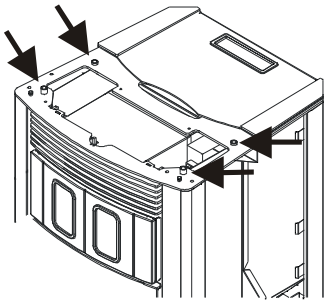
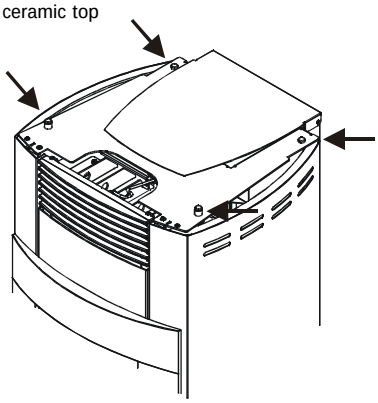


Figure 11 – Supports for installation of ceramic top

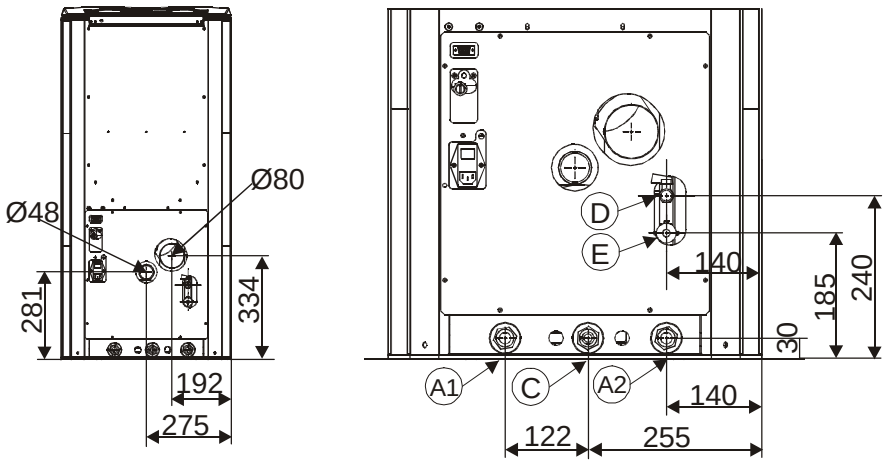
3.4. PLUMBING SYSTEM CONNECTION

IMPORTANT!
The connection of the stove to the plumbing system must be made ONLY by specialized personnel who are capable of carrying out installation properly, in compliance with current standards in the country of installation.
MCZ will not be held responsible for damage to persons or things in the event of failed operation if the aforementioned warning is not complied with.

Connect the stove using the connections provided in the lower rear part of the unit

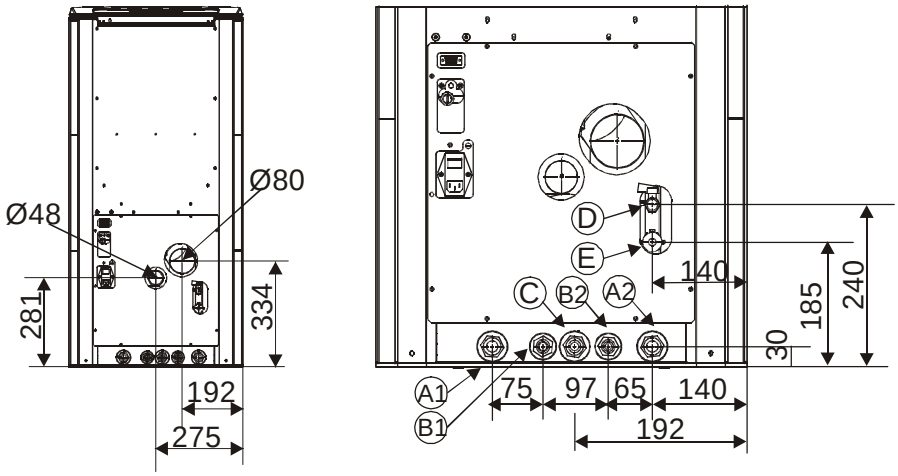


CONNECTION DIAGRAM FOR POLAR/NOVA STOVE WITHOUT KIT FOR PRODUCTION OF DOMESTIC HOT WATER



A1=Heating water delivery 3/4”M
A2=Heating water return 3/4”M
C=Vent 3/4”M
D=Refill 3/8”M
E= System empting and discharge 3/4”M

CONNECTION DIAGRAM FOR POLAR/NOVA STOVE WITH KIT FOR PRODUCTION OF DOMESTIC HOT WATER



A1=Heating water delivery 3/4”M
A2=Heating water return 3/4”M
B1=Domestic hotwater outlet 1/2”M
B2=Domestic hotwater inlet 1/2”M
C=Vent 3/4”M
D=Refill 3/8”M
E= System empting and discharge 3/4”M

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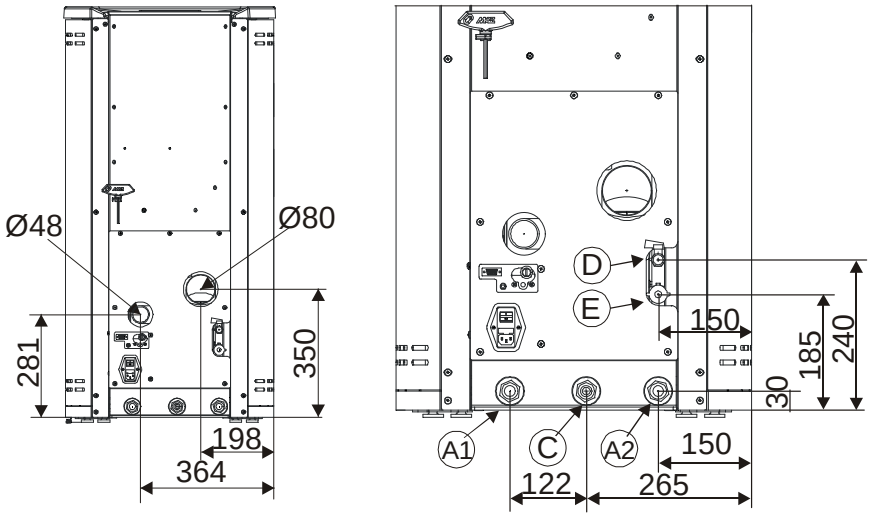
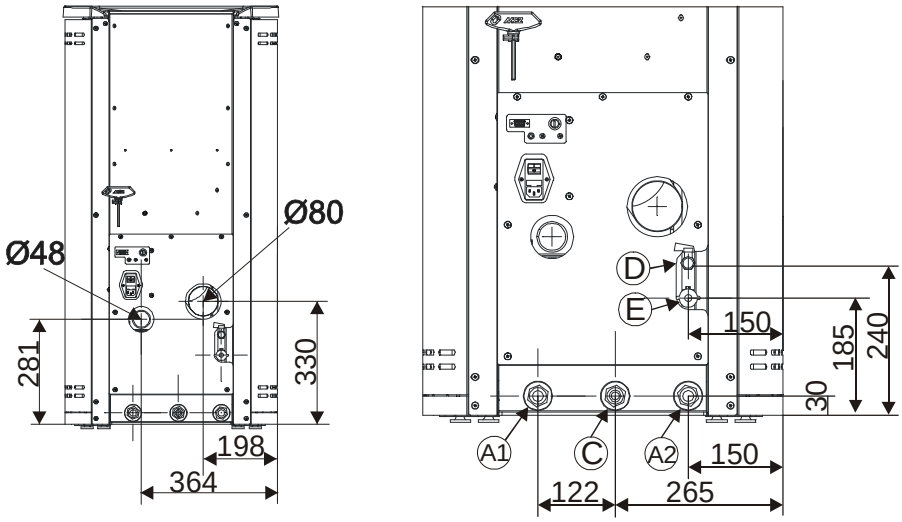
CONNECTION DIAGRAM FOR ATHOS HYDRO STOVE



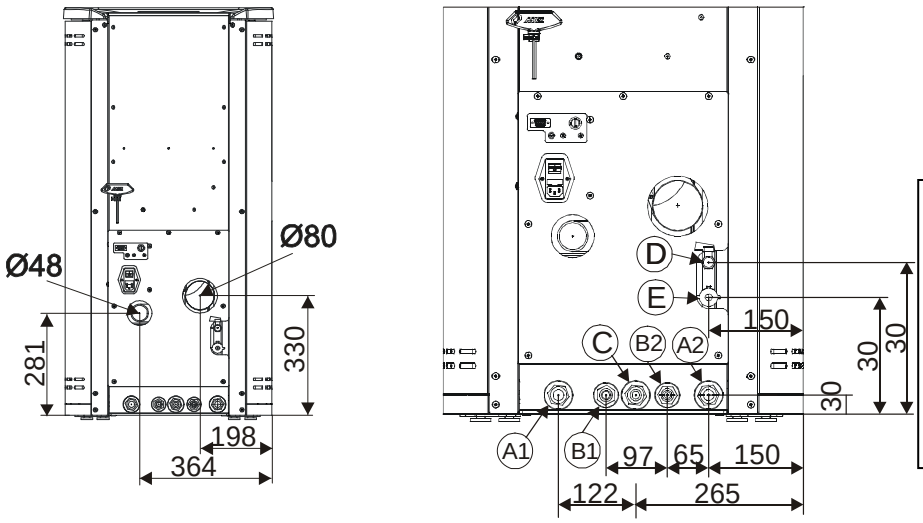
A1=Heating water delivery 3/4"M
A2=Heating water return 3/4"M
C=Vent 3/4"M
D=Refill 3/8"M
E= System empting and discharge 3/4"M

CONNECTION DIAGRAM FOR ATHOS POWER STOVE WITHOUT KIT FOR PRODUCTION OF DOMESTIC HOT WATER



A1=Heating water delivery 3/4"M
A2=Heating water return 3/4"M
C=Vent 3/4"M
D=Refill 3/8"M
E= System empting and discharge 3/4"M

CONNECTION DIAGRAM FOR ATHOS POWER STOVE WITH KIT FOR PRODUCTION OF DOMESTIC HOT WATER



A1=Heating water delivery 3/4"M
A2=Heating water return 3/4"M
B1=Domestic hotwater outlet 1/2"M
B2=Domestic hotwater inlet 1/2"M
C=Vent 3/4"M
D=Refill 3/8"M
E= System empting and discharge 3/4"M

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3.4.1. Connections to the system

Make the connections to the corresponding fittings shown in the diagram on the previous page. Make sure the pipes are not placed under tension or undersized.

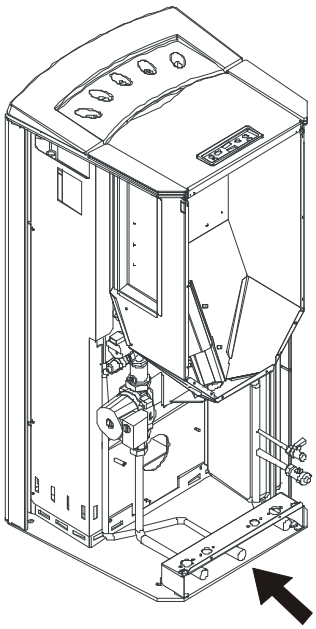
IMPORTANT

IT IS STRONGLY RECOMMENDED TO WASH THE ENTIRE SYSTEM BEFORE CONNECTING IT IN ORDER TO GET RID OF RESIDUES AND DEPOSITS.

Upstream from the stove, always install shutters so as to disconnect it from the plumbing system should it be necessary to move it, or when it requires routine and/or special maintenance.

Connect the stove using hoses so that the stove is not too strictly connected to the system, and to allow slight movements.

The pressure discharge pipe should be tentatively placed in a pitcher or funnel to keep water from wetting the floor or the structure in the event of excessive pressure.



Pressure discharge pipe (3 bar)

3.4.2. System filling

To fill the system, the stove is equipped with a tap **(D)**, with a non-return valve, for manual filling of the heating system. During this operation, any air in the system is released by the automatic vent valve at the upper left of the boiler body (under the ceramic top).

To ensure the valve vents correctly, it is advisable to loosen the grey cap one turn and to keep the red cap blocked *(see figure)*

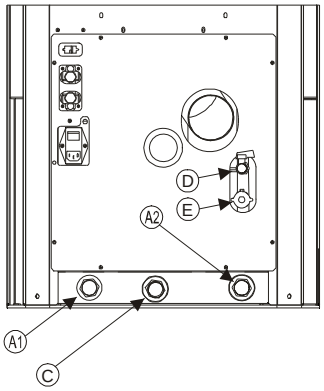
The filling pressure of the system **WHEN COLD** must be **1 bar.**

During operation, if the system pressure drops (due to evaporation of dissolved gases in the water) to values lower than the minimum indicated above, the user must use the filling valve to bring the pressure back up to its normal pressure.

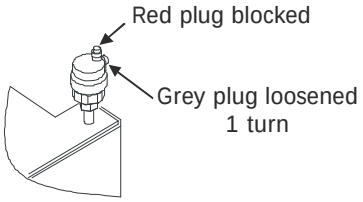
For proper operation of the stove **WHEN HOT**, the pressure in the boiler must be **1.5 bar**.

To monitor the pressure of the system, install down the line from the bibcock (D) a pressure gauge with a scale of 0-5 bar. This is to be done by the installer.

Upon completion of this operation, **always** close the tap.



Filling tap (D)



3.4.3. Water characteristics

The characteristics of the water used to fill the system are very important to prevent the build-up of mineral salts and the formation of incrustations along the pipes, in the boiler and in the heat exchangers (especially plate heat exchangers for the heating of domestic water - see chapter 4.13)

Therefore, please GET YOUR PLUMBER'S ADVICE CONCERNING:

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- Hardness of water circulating in the system, to prevent problems of incrustation and limescale, especially in the domestic water heat exchanger. (> 25° French)
- Installation of a water softener (if water hardness exceeds 25° French)
- Filling the system with treated water (demineralised).
- Possibly providing an anti-condensation circuit.
- Installation of plumbing bumpers to prevent banging along the fittings and pipes.

If you have very extensive systems, with a large amount of water, or which require frequent refilling, the installation of water softening systems.

It should be remembered that incrustations drastically reduce performance due to low thermal conductivity.

3.5. EXAMPLE INSTALLATION DIAGRAMS

The following diagrams are to be used only as a guideline. For proper connection, always follow the notes for the plumbing and heating installer. The plumbing system must meet local, regional or national requirements. Installation and verification of operation is to be performed only by specialized, authorized personnel.

MCZ will not be held liable for non-compliance with the provisions listed above.

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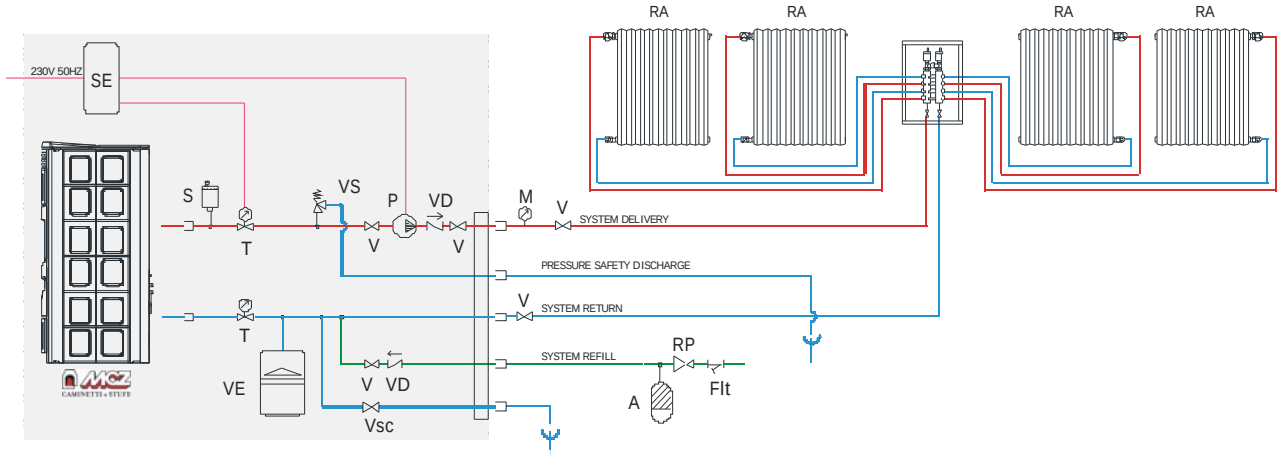
3.5.1. Heating installation diagram Heating system installation diagram without water kit (POLAR-NOVA-ATHOS POWER)

PERFORMANCE:

HEATING WITH STOVE



CONFIGURATION: POLAR / NOVA WITH DOMESTIC HOT WATER KIT

SYSTEM OF SYSTEM WITH CLOSED TANK ONLY FOR HEATING BY MEANS OF RADIATORS

SIGNATURFORKLARING:

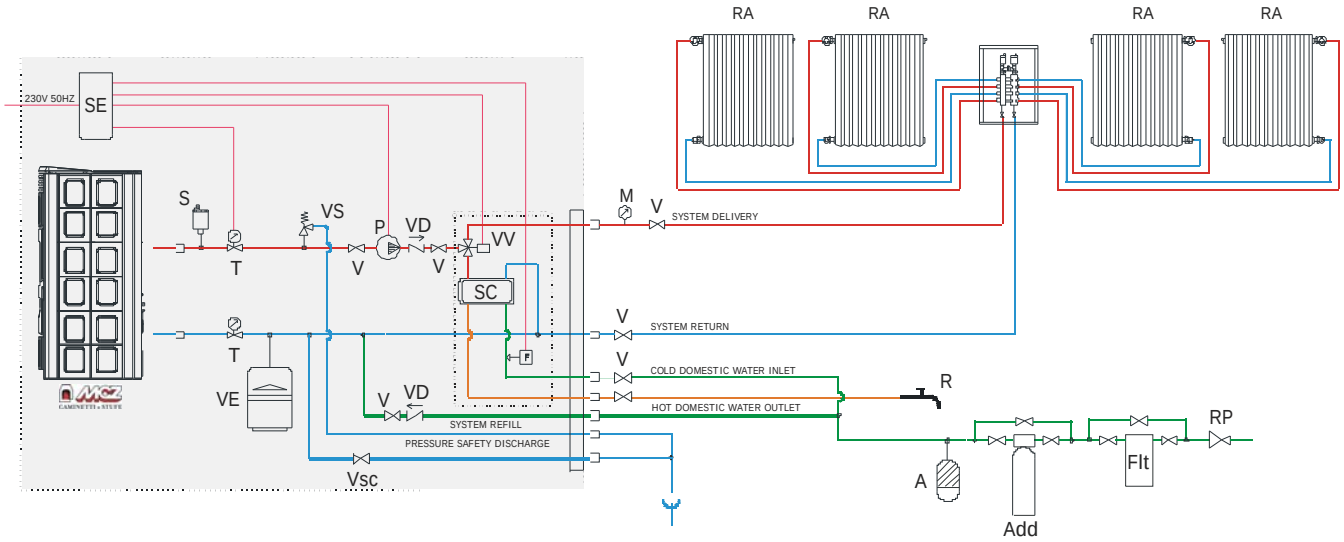
SE	Electronic card	VD	One-way valve	C	Methane gas boiler	A	Pounding absorber
S	Automatic vent	T	Measurement of boiler temperature	B	Boiler	RP	Pressure reduction valve
M	Pressure gauge	VE	Expansion tank, 1.5 bar of 6 l	BA	Storage boiler	Vsc	Boiler/system discharge valve
VS	Vent valve, 3 bar	W	3-way motorized valve	RA	Radiators	Flt	System filter
V	Valve	SC	Plate heat exchanger	PR	Radiant panels	Add	Softener
P	Pump	F	Flow switch	PS	Solar panels		

3.5.2. Heating installation diagram with domestic hot water kit (POLAR–NOVA-ATHOS POWER)

PERFORMANCE:

HEATING WITH STOVE

PRODUCTION OF DOMESTIC HOT WATER WITH STOVE



CONFIGURATION: POLAR / NOVA WITH DOMESTIC HOT WATER KIT

SYSTEM DIAGRAM WITH CLOSED TANK FOR HEATING WITH RADIATORS OR FOR THE PRODUCTION OF DOMESTIC HOT WATER

SIGNATURFORKLARING:

SE	Electronic card	VD	One-way valve	C	Methane gas boiler	A	Pounding absorber
S	Automatic vent	T	Measurement of boiler temperature	B	Boiler	RP	Pressure reduction valve
M	Pressure gauge	VE	Expansion tank, 1.5 bar of 6 l	BA	Storage boiler	Vsc	Boiler/system discharge valve
VS	Vent valve, 3 bar	W	3-way motorized valve	RA	Radiators	Flt	System filter
V	Valve	SC	Plate heat exchanger	PR	Radiant panels	Add	Softener
P	Pump	F	Flow switch	PS	Solar panels		

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3.5.3. Diagram for installation combined with external boiler (POLAR-NOVA-ATHOS POWER)

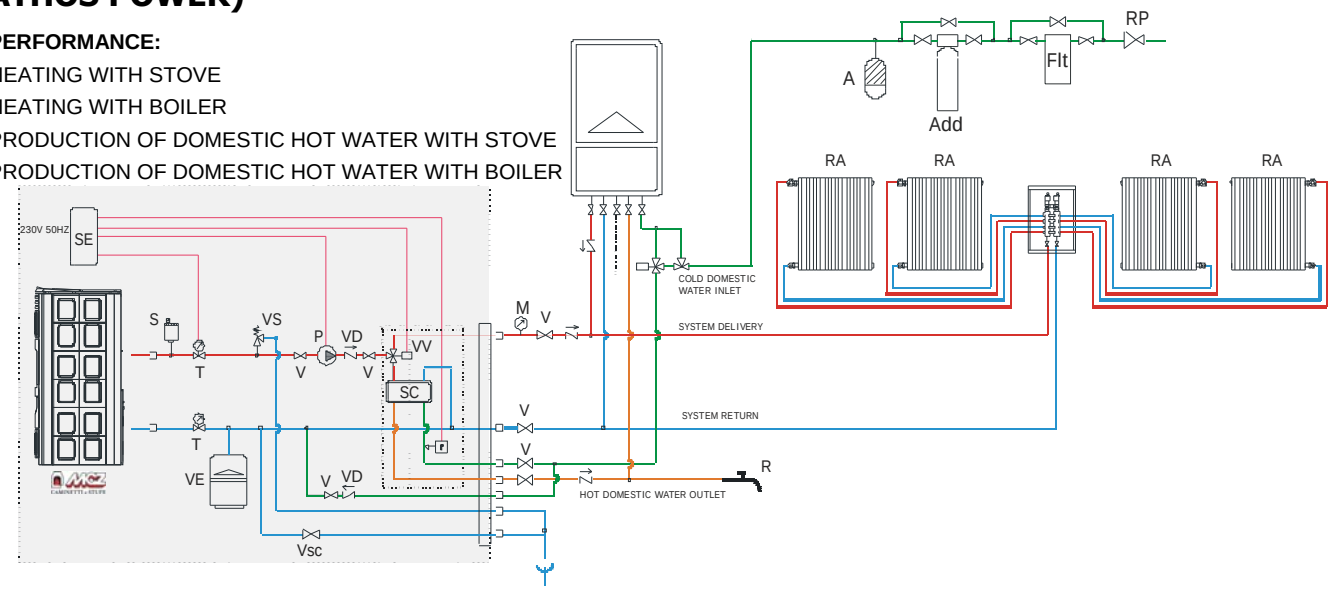
PERFORMANCE:

HEATING WITH STOVE

HEATING WITH BOILER

PRODUCTION OF DOMESTIC HOT WATER WITH STOVE

PRODUCTION OF DOMESTIC HOT WATER WITH BOILER



CONFIGURATION: POLAR / NOVA WITH DOMESTIC HOT WATER KIT PARALLEL WITH GAS BOILER

SYSTEM DIAGRAM WITH CLOSED TANK PRE-HEATING WITH RADIATORS OR FOR THE PRODUCTION OF DOMESTIC HOT WATER

SIGNATURFORKLARING:

SE	Electronic card	VD	One-way valve	C	Methane gas boiler	A	Pounding absorber
S	Automatic vent	T	Measurement of boiler temperature	B	Boiler	RP	Pressure reduction valve
M	Pressure gauge	VE	Expansion tank, 1.5 bar of 6 l	BA	Storage boiler	Vsc	Boiler/system discharge valve
VS	Vent valve, 3 bar	W	3-way motorized valve	RA	Radiators	Flt	System filter
V	Valve	SC	Plate heat exchanger	PR	Radiant panels	Add	Softener
P	Pump	F	Flow switch	PS	Solar panels		

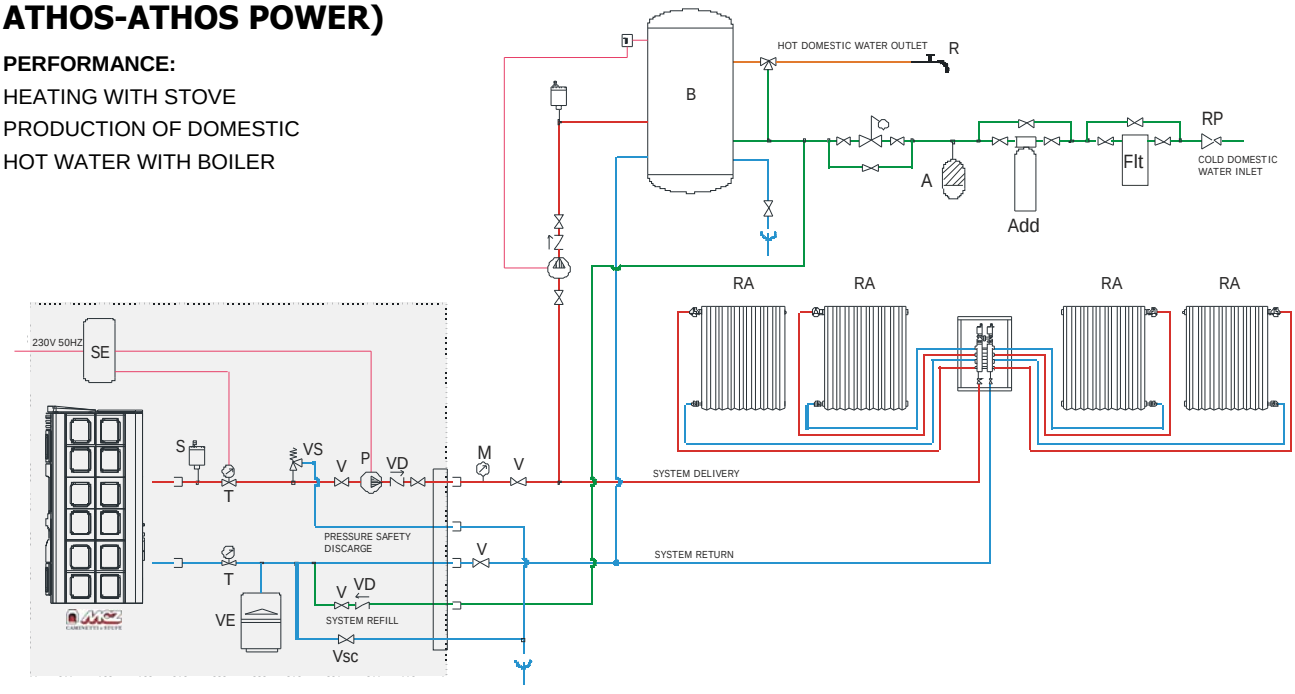
3.5.4. Heating installation diagram in combination with a boiler (POLAR-NOVA-ATHOS-ATHOS POWER)

PERFORMANCE:

HEATING WITH STOVE

PRODUCTION OF DOMESTIC

HOT WATER WITH BOILER



CONFIGURATION: POLAR / NOVA/ATHOS WITHOUT DOMESTIC HOT WATER KIT COMBINED WITH BOILER

HEATING WITH STORAGE SYSTEM PRODUCTION OF DOMESTIC HOT WATER WITH STORAGE SYSTEM

SIGNATURFORKLARING:

SE	Electronic card	VD	One-way valve	C	Methane gas boiler	A	Pounding absorber
S	Automatic vent	T	Measurement of boiler temperature	B	Boiler	RP	Pressure reduction valve
M	Pressure gauge	VE	Expansion tank, 1.5 bar of 6 l	BA	Storage boiler	Vsc	Boiler/system discharge valve
VS	Vent valve, 3 bar	W	3-way motorized valve	RA	Radiators	Flt	System filter
V	Valve	SC	Plate heat exchanger	PR	Radiant panels	Add	Softener
P	Pump	F	Flow switch	PS	Solar panels		

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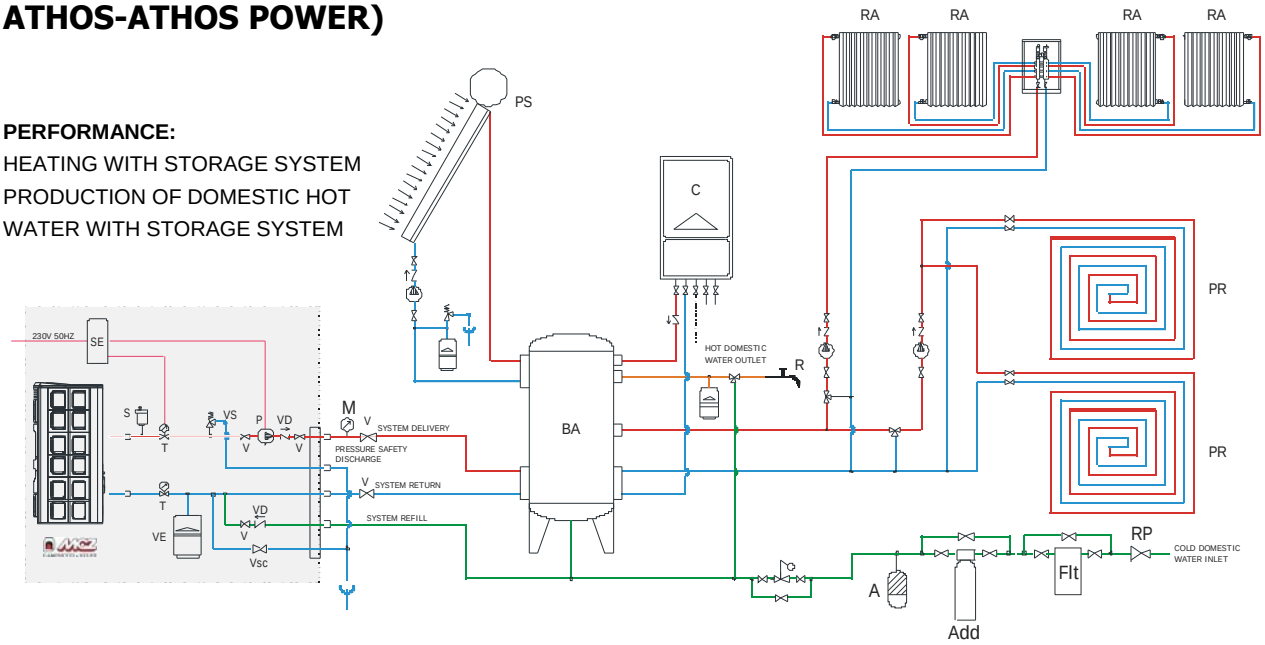
3.5.5. Heating installation in combination with a storage tank (POLAR-NOVA-ATHOS-ATHOS POWER)

PERFORMANCE:
HEATING WITH STORAGE SYSTEM
PRODUCTION OF DOMESTIC HOT WATER WITH STORAGE SYSTEM



CONFIGURATION: POLAR / NOVA/ATHOS WITHOUT DOMESTIC HOT WATER KIT COMBINED WITH STORAGE SYSTEM WITH BOILER AND SOLAR PANELS
SYSTEM DIAGRAM WITH CLOSED TANK FOR HEATING WITH RADIATORS OR RADIANT PANELS AND FOR THE PRODUCTION OF DOMESTIC HOT WATER

SIGNATURFORKLARING:

SE	Electronic card	VD	One-way valve	C	Methane gas boiler	A	Pounding absorber
S	Automatic vent	T	Measurement of boiler temperature	B	Boiler	RP	Pressure reduction valve
M	Pressure gauge	VE	Expansion tank, 1.5 bar of 6 l	BA	Storage boiler	Vsc	Boiler/system discharge valve
VS	Vent valve, 3 bar	W	3-way motorized valve	RA	Radiators	Flt	System filter
V	Valve	SC	Plate heat exchanger	PR	Radiant panels	Add	Softener
P	Pump	F	Flow switch	PS	Solar panels		

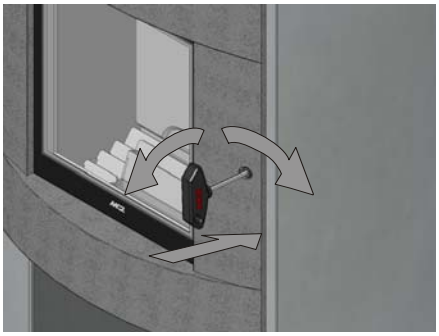
3.6. OPENING/CLOSING OF ATHOS STOVE DOOR

The Athos stove is equipped with an Allen key for the opening/closing of the door; just insert the key, exert light continuous pressure towards the door and rotate the handle (anticlockwise to open and clockwise to close the door).

The door is closed when the key will not turn any further. It is normal for this operation to require the key to be turned 180° several times.

ATTENTION!

In order for the stove to operate correctly, it is essential that the door be closed completely. Turn the key clockwise until it will clearly not turn any further.



Opening/closing of Athos stove door

3.7. MAKING THE ELECTRICAL CONNECTIONS

Connect the supply cable first at the rear of the stove and then to an electrical outlet on the wall. *Figure 12.* The main switch located on the rear of the stove should be switched on only when you want to light the stove.

If you do not intend to use the stove, it is advisable to keep it switched off.

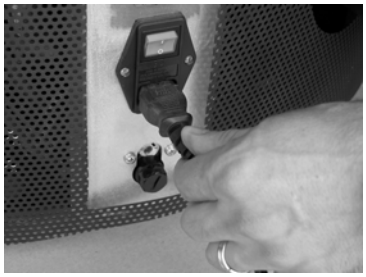


Figure 12 – Stove power cable

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4. OPERATION

4.1. PRE-LIGHTING WARNINGS

ATTENTION!

Installation is to be made only with connection to a flue pipe. Therefore, the following evaluation criteria for identification of installation are to be considered compliant with standards.

For complex or articulated installations, we recommend you contact specialized personnel or authorized MCZ service centres.

MCZ does not recommend other types of installation, where smoke is not discharged into a flue pipe, and will not be held liable for any malfunctions or anomalies.

- Do not touch the stove during the first lighting, as it is during this phase that the paint sets. If you touch the paint, you may expose the steel surface.
- If necessary, touch up the paint with the aerosol spray in the original colour (see the section "Accessories for pellet stoves").
- It is good practice to provide plenty of ventilation in the room during the initial lighting, as the stove will give off a small amount of smoke and smell of paint.
- Do not stay near the stove, and as previously mentioned, ventilate the room. The smoke and the smell of paint will vanish after about one hour of operation. There are no health risks involved.
- Make sure the plumbing system is sealed perfectly and that there are no leaks or pressure drops.
- Make sure that all cut-off valves between the stove and the system are open.
- Make sure you have vented all air out of the system before start-up.
- Make sure that internal devices work properly (flow switches, thermostats, etc.). Make sure that the combustion chamber and the flue pipe are clean, and that the plumbing circuit is free of obstructions.

The stove will be subject to expansion and contraction during the stages of lighting and cooling down, and may therefore make slight creaking noises.

This phenomenon is absolutely normal, the structure being made of sheet steel, and must not be considered a defect but rather a characteristics.

The basic settings ensure proper operation and prevent overheating during the first ignitions.

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4.2. PRE-LIGHTING CHECK

Check that all the safety conditions described above have been met.

Make sure you have read and completely understood the contents of this instruction booklet.

Remove all components from the firebox of the stove and from the door. They may catch fire otherwise. This includes the instruction booklet and various stickers.

Check that the grate for pellet combustion is correctly positioned, rests properly on the base, and that it has not moved during handling of the product.

Check that the electrical connection is correct (230 V 50 Hz), and turn on the main switch located on the rear panel of the stove.

Check that on the control panel the display is lit up with the message *OFF / "CURRENT TIME".*

4.3. LOADING THE PELLETS

Fuel is loaded from the upper part of the stove by opening a door. Pour the pellets in the hopper. When empty, it will hold about two 15-kg sacks.

This is easier if performed in two steps:

- Pour half of the contents into the hopper and wait for the fuel to settle on the bottom.
- Then pour in the rest

Never remove the protective grille from inside the hopper. When loading pellets, keep the bag from coming into contact with hot surfaces.

4.4. CONTROL PANEL

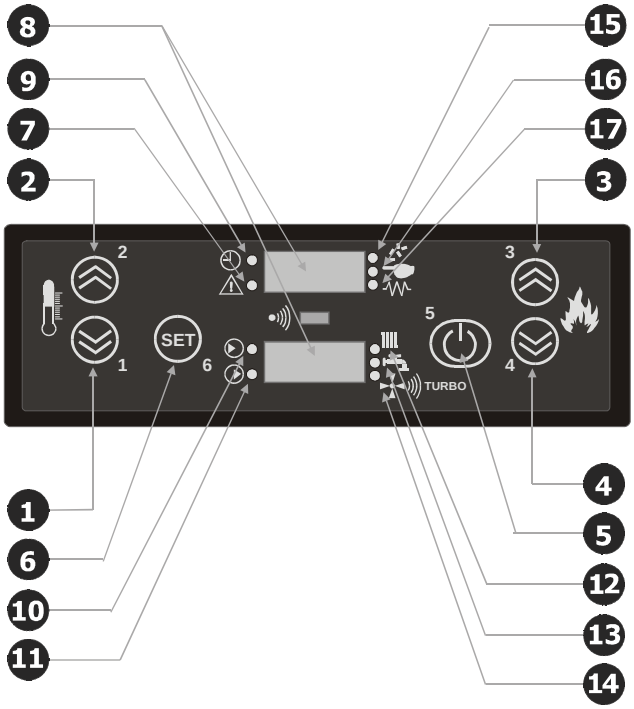
INDEX OF BUTTONS AND INDICATOR LIGHTS

BUTTONS

1. Decrease set temperature / programming functions
2. Increase set temperature / programming functions
3. Scrolling of programming menu to increase/variation of speed ventilation to increase
4. Scrolling of programming menu to decrease/diagnostics of smoke fan ventilation to decrease
5. Stove lighting / shutdown
6. Set temperature of air and water thermostats / access programming menus

INDICATOR LIGHTS

7. General alarm (see specification)
8. Display D1-D2
9. Timer active/inactive indicator light
10. Indicator light that indicates when the thermostat calls for power
11. Water pump active/inactive indicator light
12. Heating system active indicator light
13. Domestic water system active indicator light
14. Heat exchanger in operation indicator light
15. Feed screw active/ inactive indicator light
16. NOT ACTIVE
17. Ignition plug in operation indicator light



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4.5. SETTINGS TO CARRY OUT BEFORE FIRST LIGHTING

Set the main switch on the rear of the stove to position **(I).**

The display **(8)** of the control panel will show the message OFF and the CURRENT TIME.

If the time shown is not correct, it can be reset by the procedure described below.

You should keep in mind that the current time is only needed when you carry out weekly programming using the TIMER (see corresponding chapter). If the time is not set correctly, this does not in any way affect stove operation.

4.5.1. SETTING CURRENT TIME

In rapid sequence, press the buttons ❷ and ❸ to access technical parameter *UT01*. If you again press the button ❸ , you will access item UT02, which shows the hours. Use the buttons ❶ or ❷ to decrease or increase the hours.

To confirm the hour selected and move on to selection of the minute, press key ❸**.** (you will see the item *UT03*)

Use keys ❶ or ❷ to decrease/increase the minute (steps of 1 minute).

To confirm the set time and exit, press ❺

Sequence to access setting of hours and minutes.

4.6. SELECTION OF RECIPE

This is an exclusive MCZ evaluation criteria. It lets the user identify the type of pellet to be used and as a result to provide the stove with the most suitable settings. This prevent fuel waste, ensures expected heating capability and protects the condition of the product.

RECIPE SELECTION IS TO BE MADE AT INITIAL INSTALLATION AND ANY TIME THE TYPE OF PELLET IS CHANGED.

(E.g. when you change supplier or when you notice differences in colour or size of the pellets)

4.6.1. OPERATIONS FOR IDENTIFICATION OF THE RECIPE:

- Identification of type of fuel

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4.6.1.1. Identification of type of pellet

To identify the type of fuel:

Requirements:

- Scales (measuring up to ½ kg) with graduations down to 10 g
- MCZ pellet measuring container supplied with stove (PelletBox®)
- A batten
- Pellets (fuel)

Figure 1

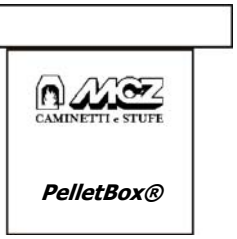


Figure 2

Fill the PelletBox® generously with pellets **without compacting** it (i.e. without banging the measure on the table or pressing the pellets down with the hands). *Figure 1*

Rest the batten (or ruler, blade or pencil) on the top edge of the container and level the material by removing the excess. *Figure 2*

Weigh the total (container + pellets) and note the weight. *Figure 3*

Figure 3

Take the measure, empty it, and look at the table designed for the selection of the recipe. *Figure 4*

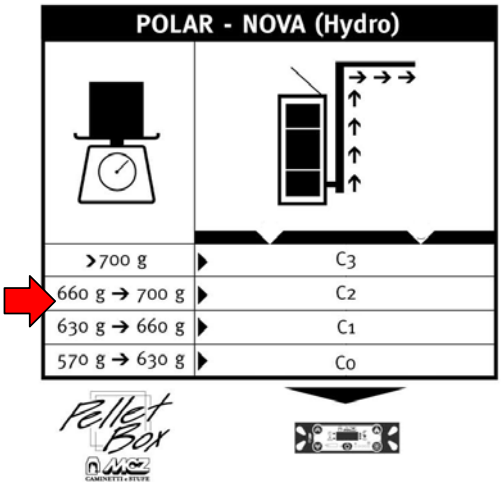


Figure 4

4.6.2. Procedure for recipe selection

In the left-hand column, marked 'Weight', identify which row contains the weight which was noted earlier.

On the same line, identify in the right-hand column of the table the correct parameter (recipe) for your fuel.

Example:

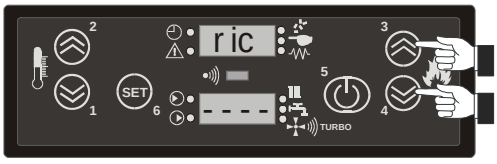
Suppose you are using fuel that weighs **680 grams.**

First of all, identify the model of stove in question (in the example, a Polar Hydro). Then look at the corresponding table on the face of the measuring cup. In the "**Weight**" column, you will see that 680 g is included in the line "**from 660 to 700**".

Moving to the column alongside the one for weight, you will see that the recipe to be used to programme the stove is **C2**.

4.6.3. Memorization of recipe on stove.

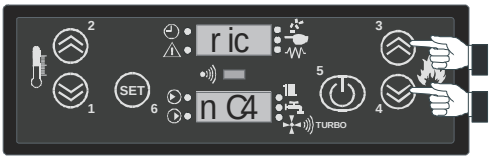
THE PROCEDURE FOR SELECTING THE RECIPE IS ACTIVE ONLY WHEN THE STOVE IS NOT LIT.



First access to recipe selection menu

Press in rapid succession, or simultaneously, the buttons ❸ and ❹.

The message "ric" will appear, alternating with the number of the previously set recipe (to recall the previous example, "**n C2**" will be shown).

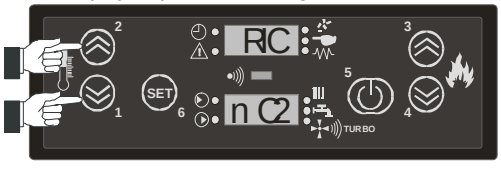


Phase 1: Example of access to recipe menu and display of previous setting

Alternatively, if the display shows the message "- - - -", it indicates that no recipe is currently selected (first lighting).

To exit from the menu without making changes, press key ❸ or key ❹, or wait 120 seconds without pressing a key.

To modify or set a new recipe, press the buttons ❶ or ❷ in order to find the desired recipe according to the diagram on the BoxPellet® (measuring cup). The diagram is reproduced here.



Phase 2: To choose the desired recipe, press the indicated button

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To confirm the selection you have made, you must press the button ❺ until the display once again shows the time and the message "OFF".

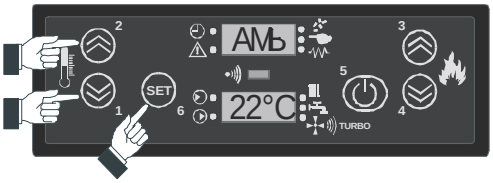
The default recipe for the stove is C1, for all versions and for all countries.

4.7. CONTROL OF WATER TEMPERATURE IN BOILER

The stove is already set with a series of standard parameters that allow it to operate properly (water temperature 65°C and ambient temperature 22°C). However, the user can change these parameters in the following way:

The following parameters can be set:

T Ambient This is the temperature that you want to attain in the room where the stove is installed. To adjust it, press **ONCE on the button ❻ "SET" and change the values using the buttons ❶** or **❷**

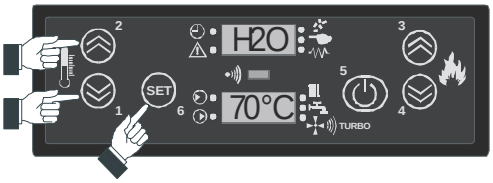


Setting of ambient temperature

T H_2O = Maximum temperature of water in boiler. Upon reaching this temperature, the stove will reduce its performance to prevent overheating. The default temperature is 65°C and it can not be set below 40°C or over 80°C.

To adjust it, press **TWICE in rapid succession on the button ❻ "SET" and change the values using the buttons ❶** or **❷**

It is not advisable to set the temperature below 50/55°C so as to prevent the formation of condensation in the boiler



System pressure temperature setting

4.8. FIRST LIGHTING

You are now ready to light your stove.

The following is a brief description of how to light and extinguish your stove to satisfy your curiosity and expectations.

4.8.1. Lighting the stove

To light the stove **from the panel**, press the button ❺ for a few seconds.

After about 15 minutes, the display (8) will show the ambient temperature on the upper display and the water temperature in the boiler on the lower display. The stove is now LIT.

If you have completed the lighting phase and there is no flame (the stove is not lit), the display **(8)** will show the message "**Alarm no ignition**" accompanied by an intermittent sound alarm. In this case, turn the stove off by pressing for a few seconds on the button ❺.

The display **(8)** will show the message "Off / current time".

Check the grate. Are there pellets?

Stove on and working at full power

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If this is the first lighting, the fuel which has to travel from the hopper to the grate is not arriving in time or in the properly programmed amount. In this case the grate will either be empty or will contain very few pellets.

REMOVE ANY PELLETS FROM THE BURNER AND REPEAT IGNITION BY PRESSING FOR A FEW SECONDS ON THE BUTTON ❺.

After repeated ignitions, if no flame appears even though there is a correct supply of pellets, there may be a problem with the components of the stove or installation may not be correct.

REMOVE THE PELLETS FROM THE BURNER AND CONTACT AN AUTHORISED MCZ TECHNICIAN.

4.8.2. Extinguishing the stove

The stove can be extinguished at any time and in any position.

To extinguish the stove, press the key ❺ for several seconds.

NEVER SHUT THE STOVE DOWN BY CUTTING OFF THE ELECTRICITY SUPPLY: Always let it complete the shutdown cycle, otherwise damage could be caused to the structure, and also problems with lighting in the future.

4.9. VIEW OF THE FLAMES

In order to get proper operation from the stove, you need to be able to interpret the appearance of the flame. Characteristics which the user should take into consideration are basically the following:

- **The shape**
- **The colour**
- **The character**

4.9.1. The shape

In normal combustion the flame should have a tapered shape, a lively character, with the tips of the flames basically vertical or pushed towards the back of the firebox. You should get the impression that the flame is being drawn upwards.

Conversely, a flame which swells outwards at the base, with a thin character, with a point that appears to wander, could be a symptom of bad setting as regards loading of the fuel and/or extraction of the fumes, or could indicate that the flue is obstructed or that there are down-draughts which impede the proper evacuation of the smoke.

In this case there will ALWAYS be operating problems. Request assistance from specialized personnel or advice from MCZ technicians.

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4.9.2. The colour

The colour is in some ways linked to the shape of the flame. A colour which varies from orange to yellow, with dark tips to the flame, is liable to be a swollen flame (as described above), lacking in oxygen or at least indicative of faulty combustion. As the colour changes towards light yellow - white, the shape of the flame alters, becoming thinner and showing the presence of higher levels of oxygen.

NORMAL COMBUSTION
Shape:
Tapered, vertical, compact
Character:
Lively
Colour:
Yellow - Light yellow - White

INCORRECT COMBUSTION
Shape:
swollen, overflowing, not compact
Character:
Weak - feeble
Colour:
Orange - yellow

4.9.3. The character

Liveliness or weakness is in any case closely connected to the shape of the flame.

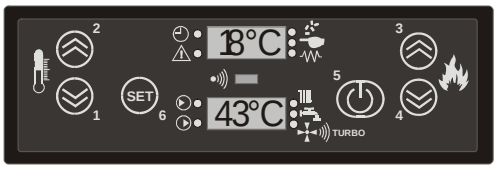
4.10. OPERATION

4.10.1. Operating concept

When you light the stove using the button ❺, after the initial ignition phase of about 15 minutes, during which the display **(8)** shows the intermediate phases "FAN ACC – LOAD WOOD – FIRE ON", the stove will start running in AUTOMATIC mode at medium power, and it will make a first check of the temperature to be reached.

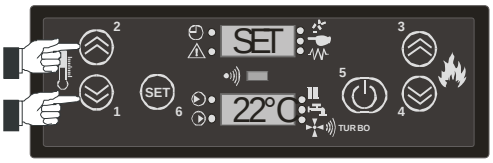
The ambient temperature is shown on the upper display **(8)** of the panel, whereas the temperature of the water in the boiler is indicated on the lower one alternating with the message H_2O

In this operating mode, you can vary only the desired room temperature using the buttons ❶ and ❷.



Stove on and working at full power

The main purpose of the stove is to bring the room temperature as measured by the thermostat (internal or external) up to the temperature set by the user.



Adjustment of thermostat temperature (temperature to be reached in the room)

Then, based on the room temperature, it performs the following evaluation:

Room temperature < Thermostat temperature ?

- **YES**
  This means that the stove must heat the room. Therefore, it will begin gradually raising its flame power until it is at its maximum.
- **NO**
  This means that the stove has achieved its objective in heating the room. Therefore, it will decrease its power to a minimum, and it will leave it there until the room temperature again drops below the temperature set in the thermostat, unless the ECO-STO function is enabled (see paragraph 4.9.3)

For proper operation, it is indispensable for the room thermostat (internal or external) to measure the temperature reliably, since the correct operation is based almost exclusively on the aforementioned control.

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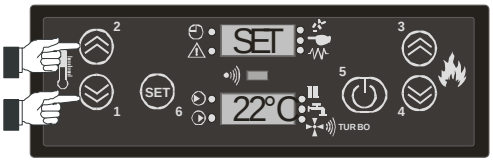
4.10.2. Operating modes

The AUTOMATIC mode lets you set a certain temperature to be reached. In this operating mode the stove will automatically vary the thermal power provided so as to keep the temperature in the room constantly at the previously set value.



Adjustment of thermostat temperature (temperature to be reached in the room)

As previously described, the temperature is adjusted using the buttons ❶ and ❷, in steps of 1 degree centigrade.

Also front ventilation, which is active in automatic mode only when the stove is hot, is divided into **5 speeds.** It can be controlled using the buttons ❸ and ❹. The speed of the fan will be shown for a few seconds on the display (8).

This setting will be maintained at the next lighting.

Adjustment of the speed of the front fan

Operating example:

If the ambient temperature measured by the local probe on the stove is 15°C, and the temperature set on the thermostat is 22°C, the stove will sequentially go to maximum power. Upon reaching the requested fixed temperature (22°C), the stove will go back to minimum power or it will enter ECO-STOP mode *(See paragraph 4.9.3)*

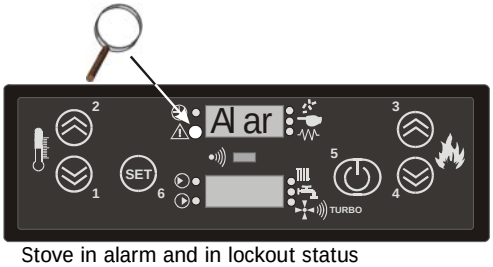
It must be remembered however that the temperature keyed into the thermostat is only indicative, and it is up to the user to find the correct setting in the location where the stove is installed (for example, to achieve 22°C in the room, it may be necessary to set the thermostat on the stove to 20°C). This is because the ambient thermostat is located near the body of the stove; therefore, it detects the heat radiated from the stove.

In this mode, lighting and shutdown are performed by the user, by pressing button ❺ for a few seconds.

It is advisable to inspect the contents of the hopper from time to time, to keep the fire from going out due to lack of fuel.

ATTENTION!

If, while the stove is running, conditions occur which modify the normal state of operation, the general alarm LED (7) lights up, accompanied by an audible 'beep' (see the paragraph on "Lockout of the stove"), and the stove reacts by starting the process of complete shutdown.



Stove in alarm and in lockout status

In the event of an electrical power outage during lighting or operation, the stove goes into a cooling-off stage and later automatically relights itself.

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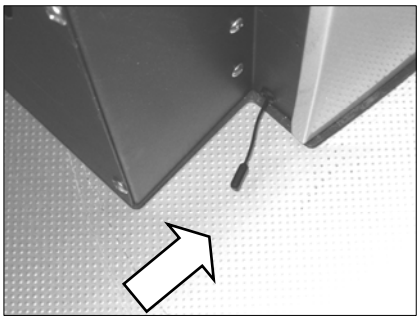
4.10.2.1. Internal thermostat - Position of internal room sensor

Only when installation is complete, be sure to check that the room probe is removed from its place and set far away from the stove, to prevent it from detecting incorrect temperatures.

The probe is located on the back part of the stove.

When you use the internal thermostat, you should always set a temperature that is a few degrees higher (for example, if you want to attain 20°C you should set to 22°C) because the probe is affected by the heat from the body of the stove.



Internal room probe

4.10.2.2. Operation by means of external thermostat

EXTERNAL THERMOSTAT (not included with the stove, to be provided by the user)

The temperature of the stove can also be controlled by an external room thermostat. It is located in a central position of the room where the stove is installed. It provides a closer match between the heating temperature requested of the stove and what it actually provides.

4.10.2.3. Connection of external thermostat

Connect the two wires coming from the wall-mounted thermostat to the terminal of the MCZ connector.

Insert the connector in the socket located on the back of the stove. *Figure 7*

Once the thermostat is connected, you will need to disconnect the internal thermostat that the stove is equipped with.

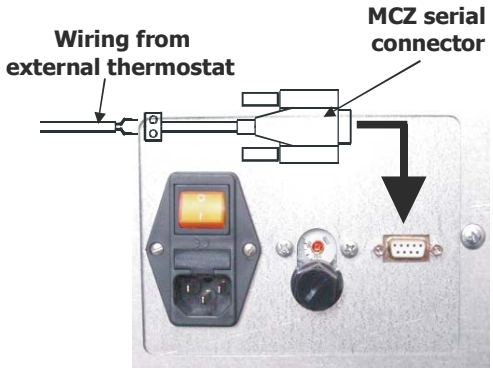


Figure 7 - Connection of the serial connector of the serial connector of the external thermostat in the socket on the back of the stove

In order to do this, proceed as follows:

- Press the button ❷ immediately followed by the button ❸ on the control panel. The display of the control panel will show the message UT01/OFF
- Press the button ❸ repeatedly until the display on the panel shows "*UT16";* the display of the control panel shows UT16
- Press and hold the button ❹ and then press the button ❸ and go to item *"UT20"*; the display will show the message UT19/OFF
- Using the buttons ❶ or ❷ , set this parameter to "ON" or "OFF". If it is set to "ON", the internal thermostat is enabled. Conversely, if it the parameter is set to "OFF", the external thermostat is enabled and the internal one is disabled.
- Therefore, if you need to enable the external thermostat, you will need to set parameter "UT20" to "OFF".

To exit the menu, press the button ❺ or wait 60 seconds

External thermostat enabled and internal thermostat disabled

4.10.3. Setting of ECO-STOP mode

The thermostat manages stove operation by **shutting the stove down once the set temperature is reached and then lighting again when this is necessary.**

You can activate or de-activate this function, or select the intervals with which the stove is to shut down.

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1st situation: ECO-STOP inactive (default)

If you de-activate this function, when the set temperature is reached, the stove will continue operating at minimum power until power is again requested by the thermostat or until the user decides to shut the stove down manually.

The default setting for the stove is with ECO-STOP de-activated as in the previous example.

2nd situation: ECO-STOP active and time-controlled

If this function is activated, when the set temperature is reached the stove will go to minimum for a time set by the user, which may be from 1 minute to 30 minutes. During this time, if there is no temperature-related request, the stove will then shut down automatically. The stove will re-light automatically only if the thermostat requests heating.

Example with ECO-STOP active and time-controlled

If the room temperature measured by the thermostat probe (internal or external) is 15°C and the temperature set on the thermostat is 20°C, the stove will follow a pre-set ramp-up in power. Once the target temperature is reached (20°C), the stove will go to minimum power. The stove will remain in this mode for 15 minutes. If the room temperature remains above the set temperature, the stove will automatically shut down temporarily. The message "*Eco Stop*" will be shown. When room temperature drops below the thermostat set value (for example 18°C) the stove will prepare for automatic relighting ("COOL-FIRE"). It will then start operating until a temperature of 20°C is once again reached.

If the stove is equipped with the kit for the production of domestic hot water, and hot water is requested for over 30 seconds (by means of the flow switch), the stove will relight immediately without going through the aforementioned cooling phases ("COOL-FIRE")

All automatic relighting operations, either due to a drop in room temperature or a request for hot water, are possible if the stove is on or in ECO-STOP mode.

If the user shuts the stove down manually with the button ❺, the stove will not relight automatically upon variation of the temperature or if hot water is requested

If there is a kit for the production of domestic hot water, you should disable the ECO-STOP mode in order to reduce response times when hot water is requested.

It must be remembered however that the temperature keyed into the thermostat is only indicative, and it is up to the user to find the correct setting in the location where the stove is installed (for example, you need to set 22°C on the thermostat to attain an actual temperature of 20°C). In this mode, the user can light the stove by resetting the thermostat to a temperature greater than room temperature, or by pressing for a few seconds on the button ❺. You will go to "Off" mode, and then the same button is pressed to relight the stove.

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STOVE BEHAVIOUR WITH TIME ACTIVE:

Stove status	Timer intervenes to…	The stove…
ECO STOP	Shut down the stove	Shuts down permanently and turns OFF
ECO STOP	Light the stove	Remains in ECO STOP status

4.10.3.1. *Activation /de-activation of ECO-STOP mode*

4.10.3.2. OPERATION TO BE CARRIED OUT BY THE INSTALLER

- Press the main switch on the back of the stove and place it in the position "I". The display of the control panel will show the message OFF/CURRENT TIME
- Press the button ❷ immediately followed by the button ❸ on the control panel. The display of the control panel will show the message UT01/OFF
- Press the button ❸ repeatedly until the display on the panel shows "*UT16";* the display of the control panel shows UT16/OFF
- Press and hold the button ❹ and then press the button ❸ and go to item *"UT19"*; the display will show the message UT19/OFF
- Press the button ❶ or ❷ to activate or deactivate the function, or to change the time of intervention of the ECO-STOP mode. The display of the panel will show the message UT19/OFF or UT19/1', UT19/2', UT19/3'……. UT19/30'
- Press the button ❺ for a few seconds to confirm until the panel shows the message OFF/CURRENT TIME

4.10.4. Programmed mode (with timer)

This operating mode, shown by the indicator light **(9)** on the display, lets you programme stove lighting or extinguishing on a weekly basis.

Normally, the POLAR and NOVA stoves have the PROGRAMMED mode deactivated. (indicator light **9** is off)

The basic characteristics in PROGRAMMED mode are:

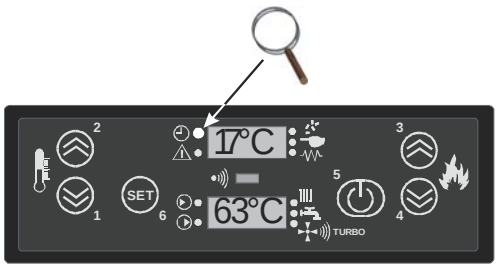
- **Start day**
- **Clock**
- **Programme** (4 daily programmes are available)

4.10.4.1. *Start day (code on display UT 01)*

The current day is set first, and will act as a reference for the programming sequence. This means you will need to ask yourself: what day is it today?

Suppose that as you read this paragraph it is **Friday**. Using the table shown here (*Figure 8*), you will see that Friday corresponds to **DAY 5**. You will need to assign the stove the starting day of **DAY 5**.

To set this value, press in sequence buttons ❷ and ❸. The code *"UT 01"* will appear, alternating with the message "OFF". Now press once on the button ❶ and you will see the message "DAY 7". You will immediately note that the indicator light **(9)** of the display is on.



Display (9)				
Italiano	Deutsch	Francais	Español	English
LUN	MON	LUN	LUN	MON
MAR	DIE	MAR	MAR	TUE
MER	MIT	MER	MIE	WED
GIO	DON	JEU	JUE	THR
VEN	FRE	VEN	VIE	FRI
SAB	SAM	SAM	SAB	SAT
DOM	SON	DIM	DOM	SUN

Figure 8 – Table of correspondence for days of week

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Press twice more on button ❶ and you will see in sequence the messages "DAY 6 → **DAY 5**".

The display **(8)** will now show the message "**DAY 5**" alternating with the code *"UT 01".*

The same procedure can be implemented using the button ❷. The only difference is that the menu scrolls in the opposite direction as shown:

"OFF →DAY 1→DAY 2→DAY 3→DAY 4→**DAY 5**"

To memorize the setting, press the button ❸.

Buttons for menu access.

SUMMARY:

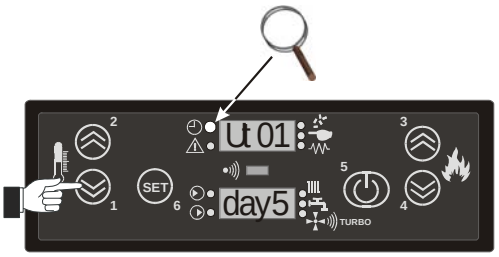
To **ACTIVATE** the PROGRAMMED mode (indicator light **9** on) press in sequence the buttons ❷ and ❸ to show the code *"UT 01"*. Then press the buttons ❶ or ❷ to increase or decrease the start day. To memorize, press the button ❸.

ATTENTION!

Any day memorized except for the message "OFF" activates PROGRAMMED mode.

To **DE-ACTIVATE** PROGRAMMED mode (indicator light 9 off), press in sequence buttons ❷ and ❸ to display the code "UT 01". Then press the buttons ❶ or ❷ until the message "OFF" is shown; confirm by pressing the button ❸.

Only the memorized message "OFF" de-activates the PROGRAMMED mode.



Selection of current day and activation of programmed mode.

4.10.4.2. *Clock (code on display UT 02 and UT 03)*

See paragraph 4.5.1. on time setting to find out how to set the current time.

The following are the main points.

- **Setting of HOURS (code on display UT 02)**

  Press the buttons ❷ and ❸ to access the setting menu and parameter "UT 01". Use the button ❸ to access the parameter "UT02" which corresponds to the time on the clock expressed in HOURS.

  The display **(8)** will alternately show the code "UT 02" and the indication of the internal time of the stove present at that moment.

  Use the button ❶ (increase) or ❷ (decrease) to set the hours.

  To memorize, press the button ❸, which will take you to the next display, "UT 03", to set the minutes.

- **Setting of MINUTES (code on display UT 03)**

  The display **(8)** will alternately show the code "UT 03" and the current minutes on the clock.

  Use the button ❶ (increase) or ❷ (decrease) to set the minutes.

  To memorize, press the button ❸. This will take you to the display of "UT 04".

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The code "UT 04" is not part of PROGRAMMED mode.
It is to be used only by the installer or a qualified technician from MCZ by means of an access key.
Press button 3 again to proceed and to display the code "UT 05".

4.10.4.3. *Programme*

The POLAR, NOVA and ATHOS stoves can run up to 4 operating programmes distributed over the course of the day or for the entire week.

Each programme features three basic steps:

- **The time the stove comes on (it must be between 00:00 and 23:40)**
- **The time the stove shuts down (it must be greater than the start time, up to a maximum 23:50)**
- **The days in which the lighting or extinguishing of the stove must be ACTIVATED or DEACTIVATED**

Please look at **PROGRAMME 1** (summarized in the following table). It is the first of four programmes in the programming sequence.

PROGRAMME 1			
Symbol on display (8)	UT 05	UT 06	UT 07
Data to be inserted	Schedule Lighting the stove	Schedule Shutdown	Days activated or deactivated On/Off 1,2,3,4,5,6,7

PROGRAMME 1: setting of **stove lighting time.**

This is step *UT 05*. The display **(8)** of the stove panel alternates between the message *UT 05* and a time value expressed in hours and minutes. Use the keys ❶ (increase) or ❷ (decrease) to set the **time of lighting** of the stove for this programme. Each time the key is pressed, the time increases or decreases by 10 minutes. If you hold the key down, the increase or decrease is gradually faster. This lets you make large changes rapidly. Once you have set the time you want, memorize it by pressing the key ❸. This will take you automatically to the next step, *UT 06*.

PROGRAMME 1: setting of **stove shutdown time.**

This is step *UT 06*. The display **(8)** of the stove panel alternates between the message *UT 06* and a time value expressed in hours and minutes. Use the keys ❶ (increase) or ❷ (decrease) to set the **time of shutdown** of the stove for this programme. Each time the key is pressed, the time increases or decreases by 10 minutes. If you hold the key down, the increase or decrease is gradually faster. This lets you make large changes rapidly. Once you have set the time you want, memorize it by pressing the key ❸. This will take you automatically to the next step, *UT 07*.

PROGRAMME 1: setting of **activated or de-activated days.**

This is step *UT 07*. The display **(8)** of the stove will alternate between the code *UT 07* and one of the following: ON 1, OFF 1, ON 2, OFF 2,

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ON 3, OFF 3, ON 4, OFF 4, ON 5, OFF 5, ON 6, OFF 6, ON 7, OFF 7, where the numerals refer to the days of the week (see table), ON means "ACTIVE" and OFF means "INACTIVE". In step *UT 07*, the key ❷ scrolls the number that refers to the days, and the key ❶ activates them or deactivates them. Scroll through the days using the key ❷ . Then use the key ❶ to establish which days are to be active or inactive. After making this setting, memorize it with the key ❸, and you will automatically go to *UT 08*.

1	Corresponds to **MONDAY**
2	Corresponds to **TUESDAY**
3	Corresponds to **WEDNESDAY**
4	Corresponds to **THURSDAY**
5	Corresponds to **FRIDAY**
6	Corresponds to **SATURDAY**
7	Corresponds to **SUNDAY**

Example Set the times for lighting (7:30) and extinguishing (9:30) for programme 1. This is step *UT 07*. Suppose you want to programme the stove so that it follows this programme on Monday, Wednesday and Friday.

- Press the key ❷, until you come to either position ON 1, or OFF 1. If you see ON 1, do nothing. If you see OFF 1, press the key ❶ to read ON 1 (Monday active).
- Now press once on the key ❷ to go to position ON 2, or OFF 2 and again press or not the key ❶ to read OFF 2 (Tuesday not active).
- Press once on the key ❷ to go to ON 3, or OFF 3 and then press or not key ❶ to read ON 3 (Wednesday active).
- Press once on the key ❷ to go to ON 4, or OFF 4 and then press or not key ❶ to read ON 4 (Thursday inactive).
- Press once on the key ❷ to go to ON 5, or OFF 5 and then press or not key ❶ to read ON 5 (Friday active).
- Press once on the key ❷ to go to ON 6, or OFF 6 and then press or not key ❶ to read ON 6 (Saturday inactive).
- Press once on the key ❷ to go to ON 7, or OFF 7 and then press or not key ❶ to read ON 4 (Sunday inactive).
- Finally, press the key ❸ to memorize complete setting of activations of programme 1, and you will go automatically to step *UT 08,* thus entering **PROGRAMME 2.**

PROGRAMME 2			
Symbol on display (8)	UT 08	UT 09	UT 10
Data to be inserted	Schedule Lighting the stove	Schedule Shutdown	Days activated or deactivated On/Off 1,2,3,4,5,6,7

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This is the second of four available programmes. The methods of setting are the same as those for the previously described programme.

PROGRAMME 3			
Symbol on display (8)	UT 11	UT 12	UT 13
Data to be inserted	Schedule Lighting the stove	Schedule Shutdown	Days activated or deactivated On/Off 1,2,3,4,5,6,7

This is the third of four available programmes. The methods of setting are the same as those for PROGRAMME 1.

PROGRAMME 4			
Symbol on display (8)	UT 14	UT 15	UT 16
Data to be inserted	Schedule Lighting the stove	Schedule Shutdown	Days activated or deactivated On/Off 1,2,3,4,5,6,7

This is the last of four available programmes. The methods of setting are the same as those for PROGRAMME 1.

TO EXIT THE PROGRAMMING SEQUENCE, YOU WILL ONCE AGAIN NEED TO PRESS BUTTON 3 AFTER YOU COME TO STEP "UT 16".

IMPORTANT NOTE

The stove requires about 20 minutes before sufficiently warm air comes out, and another 10 minutes before it is up to full power. Take this into account when setting the start time. Likewise, stove shutdown requires about 30 minutes, during which the heat stored up by the stove is released into the room. Keep this in mind for substantial fuel savings.

4.11. EXAMPLE OF PROGRAMMING

Here is a complete example of programming. It refers to a weekly heating cycle in a home which is always inhabited, with the residents coming home at lunchtime and in the late afternoon.

On weekdays, heating is desired first thing in the morning, during the lunch break, and upon returning home from work. On weekends, heating is to be in operation at all times.

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PROGRAMME 1 (6:30-8:00, Mon. to Fri.)

DESCRIPTION	ACTIVATION	STEP	DISPLAY	CONFIRMATION
Entry into programming sequence	Key 3	UT 01	Day 1...Day 7..Off	
Today is Thursday (Day 4)	Button 1 or Button 2	UT 01	Day 4	Button 3
It is now six o'clock p.m. ...	Button 1 or Button 2	UT 02	18	Button 3
and 12 minutes	Button 1 or Button 2	UT 03	12	Button 3
Step not used (for maintenance)		UT 04		Button 3
Programme 1: stove lighting time 6:30 a.m. (hot at 7:00 a.m.)	Button 1 or Button 2	UT 05	6:30	Button 3
Programme 1: stove shotdown time 8:00 a.m. (cold at 8:30)	Button 1 or Button 2	UT 06	08:00	Button 3
Programme 1: active day Monday	Button 2	UT 07	ON 1 or OFF 1	
Programme 1: active day Monday	Button 1	UT 07	ON 1	
Programme 1: active day Tuesday	Button 2	UT 07	ON 2 or OFF 2	
Programme 1: active day Tuesday	Button 1	UT 07	ON 2	
Programme 1: active day Wednesday	Button 2	UT 07	ON 3 or OFF 3	
Programme 1: active day Wednesday	Button 1	UT 07	ON 3	
Programme 1: active day Thursday	Button 2	UT 07	ON 4 or OFF 4	
Programme 1: active day Thursday	Button 1	UT 07	ON 4	
Programme 1: active day Friday	Button 2	UT 07	ON 5 or OFF 5	
Programme 1: active day Friday	Button 1	UT 07	ON 5	
Programme 1: inactive day Saturday	Button 2	UT 07	ON 6 or OFF 6	
Programme 1: inactive day Saturday	Button 1	UT 07	OFF 6	
Programme 1: inactive day Sunday	Button 2	UT 07	ON 7 or OFF 7	
Programme 1: inactive day Sunday	Button 1	UT 07	OFF 7	
Programme 1: CONFIRM		UT 08		Button 3

PROGRAMME 2 (11:30 a.m. - 1:00 p.m., Mon. to Fri.)

DESCRIPTION	ACTIVATION	STEP	DISPLAY	CONFIRMATION
Programme 2: stove lighting time 11:30 a.m. (hot at 12:00)	Button 1 or Button 2	UT 05	11 : 30	Button 3
Programme 2:stove shutdown time 1:00 p.m. (cold at 1:30 p.m.)	Button 1 or Button 2	UT 06	13 :00	Button 3
Programme 2: active day Monday	Button 2	UT 07	ON 1 or OFF 1	
Programme 2: active day Monday	Button 1	UT 07	ON 1	
Programme 2: active day Tuesday	Button 2	UT 07	ON 2 or OFF 2	
Programme 2: active day Tuesday	Button 1	UT 07	ON 2	
Programme 2: active day Wednesday	Button 2	UT 07	ON 3 or OFF 3	
Programme 2: active day Wednesday	Button 1	UT 07	ON 3	
Programme 2: active day Thursday	Button 2	UT 07	ON 4 or OFF 4	
Programme 2: active day Thursday	Button 1	UT 07	ON 4	
Programme 2: active day Friday	Button 2	UT 07	ON 5 or OFF 5	
Programme 2: active day Friday	Button 1	UT 07	ON 5	
Programme 2: inactive day Saturday	Button 2	UT 07	ON 6 or OFF 6	
Programme 2: inactive day Saturday	Button 1	UT 07	OFF 6	
Programme 2: inactive day Sunday	Button 2	UT 07	ON 7 or OFF 7	
Programme 2: inactive day Sunday	Button 1	UT 07	OFF 7	
Programme 2: CONFIRM		UT 08		Button 3

PROGRAMME 3 (4:30 p.m.-9:30 p.m., Mon. to Fri.)

DESCRIPTION	ACTIVATION	STEP	DISPLAY	CONFIRMATION
Programme 3: stove lighting time 4:30 p.m. (hot at 5:00 p.m.)	Button 1 or Button 2	UT 05	16 : 30	Button 3
Programme 3:stove shutdown time 9:30 p.m. (cold at 10:00 p.m.)	Button 1 or Button 2	UT 06	21 :30	Button 3
Programme 3: active day Monday	Button 2	UT 07	ON 1 or OFF 1	
Programme 3: active day Monday	Button 1	UT 07	ON 1	
Programme 3: active day Tuesday	Button 2	UT 07	ON 2 or OFF 2	
Programme 3: active day Tuesday	Button 1	UT 07	ON 2	
Programme 3: active day Wednesday	Button 2	UT 07	ON 3 or OFF 3	
Programme 3: active day Wednesday	Button 1	UT 07	ON 3	
Programme 3: active day Thursday	Button 2	UT 07	ON 4 or OFF 4	
Programme 3: active day Thursday	Button 1	UT 07	ON 4	
Programme 3: active day Friday	Button 2	UT 07	ON 5 or OFF 5	
Programme 3: active day Friday	Button 1	UT 07	ON 5	
Programme 3: inactive day Saturday	Button 2	UT 07	ON 6 or OFF 6	
Programme 3: inactive day Saturday	Button 1	UT 07	OFF 6	
Programme 3: inactive day Sunday	Button 2	UT 07	ON 7 or OFF 7	
Programme 3: inactive day Sunday	Button 1	UT 07	OFF 7	
Programme 3: CONFIRM		UT 08		Button 3

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PROGRAMME 4 (7:30 a.m. - 10:30 p.m. Saturday and Sunday)

DESCRIPTION	ACTIVATION	STEP	DISPLAY	CONFIRMATION
Programme 4: stove lighting time 7:30 a.m. (hot at 8:00 a.m.)	Button 1 or Button 2	UT 05	7 : 30	Button 3
Programme 4: stove shutdown time 10:30 p.m. (cold at 11:00 p.m.)	Button 1 or Button 2	UT 06	22 :30	Button 3
Programme 4: inactive day Monday	Button 2	UT 07	ON 1 or OFF 1	
Programme 4: inactive day Monday	Button 1	UT 07	OFF 1	
Programme 4: inactive day Tuesday	Button 2	UT 07	ON 2 or OFF 2	
Programme 4: inactive day Tuesday	Button 1	UT 07	OFF 2	
Programme 4: inactive day Wednesday	Button 2	UT 07	ON 3 or OFF 3	
Programme 4: inactive day Wednesday	Button 1	UT 07	OFF 3	
Programme 4: inactive day Thursday	Button 2	UT 07	ON 4 or OFF 4	
Programme 4: inactive day Thursday	Button 1	UT 07	OFF 4	
Programme 4: inactive day Friday	Button 2	UT 07	ON 5 or OFF 5	
Programme 4: inactive day Friday	Button 1	UT 07	OFF 5	
Programme 4: Active day Saturday	Button 2	UT 07	ON 6 or OFF 6	
Programme 4: Active day Saturday	Button 1	UT 07	ON 6	
Programme 4: Active day Sunday	Button 2	UT 07	ON 7 or OFF 7	
Programme 4: Active day Sunday	Button 1	UT 07	ON 7	
Programme 4: CONFIRM		UT 08		Button 3

If a programme is not used, all days of the week relating to that programme must be set to "OFF"

DESCRIPTION	ACTIVATION	STEP	DISPLAY	CONFIRMATION
Programme 4: stove lighting time - NOT USED		UT ..	ANY	Button 3
Programme 4: stove shutdown time - NOT USED		UT ..	ANY	Button 3
Programme 4: inactive day Monday	Button 2	UT ..	ON 1 or OFF 1	
Programme 4: inactive day Monday	Button 1	UT ..	OFF 1	
Programme 4: inactive day Tuesday	Button 2	UT ..	ON 2 or OFF 2	
Programme 4: inactive day Tuesday	Button 1	UT ..	OFF 2	
Programme 4: inactive day Wednesday	Button 2	UT ..	ON 3 or OFF 3	
Programme 4: inactive day Wednesday	Button 1	UT ..	OFF 3	
Programme 4: inactive day Thursday	Button 2	UT ..	ON 4 or OFF 4	
Programme 4: inactive day Thursday	Button 1	UT ..	OFF 4	
Programme 4: inactive day Friday	Button 2	UT ..	ON 5 or OFF 5	
Programme 4: inactive day Friday	Button 1	UT ..	OFF 5	
Programme 4: inactive day Saturday	Button 2	UT ..	ON 6 or OFF 6	
Programme 4: inactive day Saturday	Button 1	UT ..	OFF 6	
Programme 4: inactive day Sunday	Button 2	UT ..	ON 7 or OFF 7	
Programme 4: inactive day Sunday	Button 1	UT ..	OFF 7	
Programme 4: CONFIRM		UT ..		Button 3

4.12. SAFETY DEVICES

The stove is fitted with the following safety devices:

- **PRESSURE SWITCH**
  Monitors pressure in the smoke duct. It is designed to shut down the pellet feed screw in the event of an obstructed flue or significant back-pressure (from the wind).
- **SMOKE TEMPERATURE SENSOR**
  Monitors the temperature of the smoke, and gives permission for startup or shuts the stove down when the smoke temperature falls below the preset value.
- **BULB TEMPERATURE PROBE OR CONTACT THERMOSTAT IN THE FUEL HOPPER (KLIXON)**
  If the temperature exceeds the preset safety level, it immediately shuts down the running of the stove, and has to be reset manually before the stove will restart *(see paragraph 4.20.3)*.

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- **BULB TEMPERATURE PROBE IN THE WATER TANK**
  If the temperature exceeds the preset safety level, it immediately shuts down the running of the stove, and has to be reset manually before the stove will restart *(see paragraph 4.20.3)*.
- **WATER TEMPERATURE PROBE**
  If the temperature of the water approached shutdown temperature (85°C), the probe causes the stove to go through a series of cooling cycles or "ECO-STOP" automatic shutdown to prevent blocking of the bulb temperature probe as described above.
- **ELECTRICAL SAFETY**
  The stove is protected against violent surges of current by the main fuse, which is located on the control panel at the rear of the stove. Other fuses to protect the electronic boards (main board and heat-exchanger board) are to be found on the boards themselves.
- **SMOKE FAN**
  If the fan stops, the electronic board shuts off the supply of pellets in good time, and an alarm message is displayed.
- **REDUCTION MOTOR**
  If the reduction motor stops, the stove will continue to run until the flame goes out due to lack of fuel and until a minimum level of cooling is reached.
- **TEMPORARY POWER OUTAGE**
  After a brief power outage, it automatically goes into cooling mode.
- **FAILURE TO LIGHT**
  If during ignition no flame develops, the stove will go into alarm condition.
- **ANTI-FREEZE FUNCTION**
  If the probe in the boiler detects a water temperature of less than 5°C, the circulation pump is automatically activated to keep teh system from freezing.
- **PUMP ANTI-SEIZURE FUNCTION**
  If the pump is not used for prolonged periods, it is activated periodically for 10 seconds to keep it from seizing up.

TAMPERING WITH THE SAFETY DEVICES IS PROHIBITED

Only after eliminating the cause of the intervention of the safety is it possible to relight the stove and thus restore its operation. To understand which anomaly has occurred, consult this manual *(paragraph 4.10.1)* which explains what to do based on the alarm message the stove displays.

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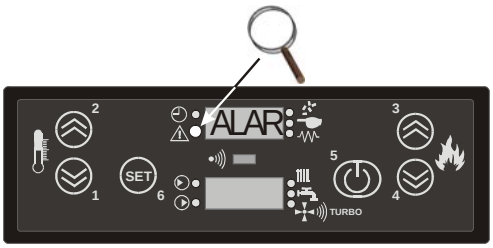
Attention!

If the stove is NOT used as described in this instruction booklet, the manufacturer refuses to accept any responsibility for damage to persons and property that may arise. The manufacturer furthermore refuses to accept responsibility for damage to persons and property arising from the failure to observe all the rules contained in the manual and in particular inthe following situations:

- **Failure when carrying out works of maintenance, cleaning and repair to adopt all necessary measures and precautions.**
- **Safey devices are removed or tampered with.**
- **The stove is not connected to a workign, efficient smoke exhaust system.**
- **The room of installation is not properly ventilated**
- **The plumbing system is not compliant with current law in the country of installation**

4.12.1. Alarm signalling



If an operating anomaly occurs, the stove is equipped with a computerized monitoring system that informs the user via the display **(8)** of the nature of the problem and where it has occurred.

The following table summarises the principal alarms which may be indicated

Message on the display (8)	Type of problem	Solution
ALAR DEP FAIL	Obstruction of smoke discharge duct or negative pressure caused by wind.	Check and clean the ENTIRE smoke duct, or check that the wind outdoors is not preventing the release of smoke. Install a wind cowl.
ALAR FAN FAIL	Fan speed too low or fan off The smoke fan is blocked.	Check for cleanliness and whether the is slowing the fan. If cleaning does not solve the problem, repalce the smoke fan
ALAR SMOKE PROBE	Smoke sensor short circuit	Replace smoke sensor
ALAR SAFE FAIL	The safety has tripped that controls the pellet hopper. Overheating has occurred due to a malfunction	Check the parameters of the recipe used. Heat exchanger not working. The stove is used for too long at maximum operating power.
ALAR HOT TEMP	This occurs when the smoke temperature exceeds 180° for an excessive length of time.	Clean the inside of the heat exchanger and run the stove at full power for shorter periods of time. Also check the quality of the pellets.
ALAR NO ACC	Occurs on first failed attempt at lighting	If this is the first attempt at lighting, relight or check the level of pellets in the hopper. Check the ignition plug.
ALAR NO FIRE	Occurs when the stove goes out and when the temperature of the smoke sensor is below the preset threshold.	It is caused when the flame is extinguished due to clogging or when there are no longer any pellets in the hopper.
ALLAR TEMP.PELLET	Pellet hopper temperature exceeds foreseen safety limit. Overheating of the stove body.	The stove body is too hot because the product has been operating for too long at maximum power, it is poorly ventilated or the air fans are faulty. Shut down the stove by pressing key 5 on the control panel, and wait for it to cool. After it has cooled down, the stove can be relit.

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4.12.2. Other signals on the display

The following table summarizes that messages that may be shown on the dispaly panel

MESSAGE ON DISPLAY	MEANING
off	The stove is off
fan acc	Initial lighting sequence
load wood	Pellet loading
fire on	Lighting sequence and adjsutment/stabilizing of flame
Eco Stop	The stove automatically shuts down upon reaching the temperature
20 C°	Example of room temperature
62 C°	Example of water temperature
UT 01, UT02,...	user paramters for programming time, time periods, etc.
day1,,,7	Days of the week
set	Setting of stove operating mode (e.g. SET MAN = Stove set to manual)
Alar fan fail	The smoke fan is not operating correctly
stop fire	Automatic cleaning of the brazier in the set period of time
mcz spa	mcz spa
cool fire	The stove is in cooling mode
alar dep fail	The pressure switch has tripped, indicating difficulty in smoke expulsion
alarm smoke probe	The smoke probe is not working correctly
alar no acc	An ignition attempt has failed.
alar no fire	There is no fire stove
alar fail sic	Thermal alarm Excessive heat in the structure

4.12.3. Lockout of the stove

The following things can cause the stove to lock out:

- Overheating of the structure and of the pellet hopper
- Overheating of the water in the boiler (T>85°C)
- High pressure in the outlet fumes (as read by the pressure switch) and therefore possible obstruction of the smoke discharge system or external back-pressure.
- Pressure in system less than or greater than the minimum or maximum parameters of operation

The lockout is indicated by the LED **(7)** lighting up, accompanied by a beep.

In this situation the shutdown cycle is automatically activated.

Once this process has started, any attempt to reset the system is useless. The cause of the lockout is shown on the display **(8)**.

4.12.3.1. *Boiler bulb thermostat*

The stove goes into a safety ALARM state called **"ALAR SIC FAIL"** due to the water temperature being too high.

MANUAL RESET THERMOSTAT

With the stove cold, in order to carry out the **manual reset**, you must unscrew the cap of the thermostatic probe on the back and press the red button to reset. You will hear a "click" of the thermostat. Then put the protection cap back in place. *Figure 7 and 8.*

Figure 7 - Touche de réarmement de la sonde à boule

Figure 8 - Comment réarmer le thermostat à boule **une fois que le poêle est froid.**

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4.12.3.2. *Pellet hopper safety thermostat*

If the pellet hopper overheats, the stove goes into a safety ALARM state called **"ALAR SIC FAIL".**

The MCZ stoves are provided with two types of safety thermostats:

- manual reset
- self-reset

If there are two thermostats (see fig. 7 and fig. 8) on the back of the stove, near the ON button, then the hopper thermostat is a manual reset thermostat. If, instead, there is only the hopper safety thermostat on the back panel, then it is self-resetting. (fig.9).

Manual reset

MANUAL RESET THERMOSTAT

With the stove cold, in order to carry out the **manual reset**, you must unscrew the cap of the thermostatic probe on the back and press the red button to reset. You will hear a "click" of the thermostat. Then put the protection cap back in place. *Figure 7 and 8.*

Self-reset

SELF-RESETTING THERMOSTAT

In this case the stove is equipped with a **self-resetting** sensor which intervenes in case of high temperature.

To cancel the alarm condition, the user must shut down the stove using the button "**5**" and wait for the stove body and the hopper to cool in order to allow the self-resetting of the thermostat (about 20 minutes after the occurrence of the alarm). At this point it is possible to light the stove again.

4.12.3.3. *Smoke expulsion*

- If you see the message **"ALAR DEP FAIL":**

  check the **ENTIRE** smoke duct, including the combustion chamber, to see that they are clean and free of obstructions. (it is recommended that this operation be conducted by a specialist MCZ technician).

  Only after the cause of the blockage has been permanently eliminated can a fresh attempt to relight the stove be made.

4.13. SHUTTING THE STOVE DOWN

The stove can be extinguished at any time and in any position.

NEVER SHUT THE STOVE DOWN BY CUTTING OFF THE ELECTRICITY SUPPLY:

Always leave it to complete the shutdown cycle, otherwise damage could be caused to the structure, and also problems with lighting in the future.

To extinguish the stove, press for a few seconds on the key ❺.

The display **(8)** will show the message **"OFF".** At this moment the shutdown cycle begins, in which the pellet loading screw stops, while the smoke extractor and the hot air exchanger remain on until the temperature of the stove has dropped.

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The actual shutdown of the stove only occurs 20 - 30 minutes later, and in any case not before the smoke temperature drops below 50 °C.

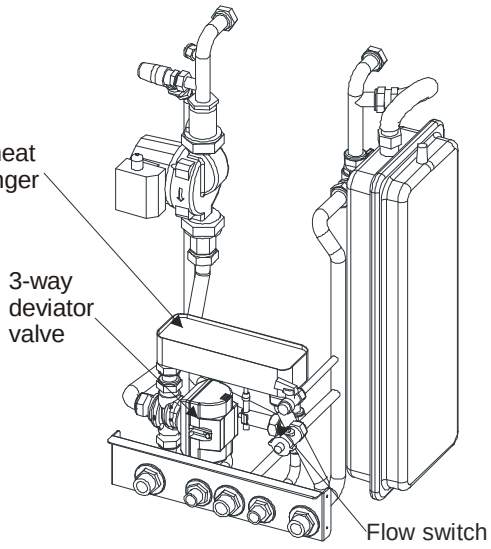
This occurs to allow the combustion fumes to be ducted into the flue pipe by means of the extractor.

It also means that there is total recovery of the heat yielded by combustion to the structure of the stove.

4.14. DOMESTIC WATER PRODUCTION KIT (optional) For POLAR-NOVA-ATHOS POWER stoves only

The POLAR and NOVA stoves can also be equipped with a complete kit for the production of domestic hot water, which is composed of:

- Plate heat exchanger
- 3-way deviator valve
- Flow switch
- Pipes and fittings for connection



The kit is pre-assembled by the manufacturer, MCZ. Its purpose is to heat domestic water from the water line of the home.

When a hot water faucet is opened, the internal flow meter orders the deviator valve to send the hot water in the boiler to the plate heat exchanger. The temperature of the hot water depends a great deal on the temperature of the heating system. As a guideline, it can be calculated by subtracting 10°-15°C from the value shown on the control panel of the stove (temperature of water in boiler).

If the stove is in ECO-STOP status and there is a request for domestic hot water, 30 seconds after the request the stove automatically starts the lighting sequence to heat the water in the boiler and then the domestic hot water.

For long-lasting operation of the plate heat exchanger, you need to know the water hardness of your system in order to prevent incrustations.

If the water in your home is very hard, you should install a water softener upstream (see chapter 3.4.3)

On a yearly basis, you should have the plate heat exchanger serviced to remove salt and calcium sediment, or replace the heating plates with new ones. These spare parts are supplied by MCZ.

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5. MAINTENANCE AND CLEANING

ATTENTION!

All cleaning of all parts must be carried out with the stove completely cold and unplugged.

The stove does not need much maintenance if used with certified quality pellets. The necessity for maintenance increases with use and depending on the performance requested of it.

Figure 1 – Example of dirty grate

5.1. CLEANING TO BE PERFORMED BY THE USER

5.1.1. Cleaning prior to each lighting

Clean the grate with a steel brush, removing any incrustation which could obstruct the passage of air. *Fig. 1-2*

Remember that only a clean, neat grate can ensure proper operation of your pellet stove.

A simple visual check, carried out daily, will reveal whether the grate is in good working order.

Figure 2 – Example of clean grate

For good cleaning of the grate, pull it completely out of its housing and thoroughly clean the grate and holes on the bottom. If you use good-quality pellets, you will normally only need to use a paintbrush to restore the perfect condition of the component. For tough incrustations, use the steel tool provided with the stove and a steel brush.

5.1.2. Check every 2/3 days

Clean and empty the ash drawers, watching out for hot ash. *Figure 2*

Only if the ash is completely cold, it is possible to use a vacuum cleaner to remove it. Use a drum-type vacuum cleaner that is suitable for picking up particles of a certain size.

Experience, and the quality of the pellets used, will determine the frequency of cleaning.

It is however advisable not to let it exceed 2 or 3 days.

When the job is completed, re-close the ash drawers, making sure that they are properly shut.

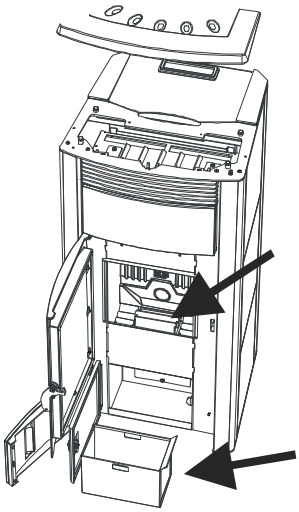

Figure 3 - Cleaning of ash collection compartment

5.1.3. Cleaning the glass

For cleaning the ceramic glass, the use of a dry brush is recommended, or if it is very dirty, the special spray detergent, applying a small quantity then cleaning with a cloth. *Figure 4*

ATTENTION!

Do not spray the product on the painted parts or on the gaskets of the door (ceramic fibre cord)

Figure 4 - Glass cleaning

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5.1.4. Cleaning the heat exchanger and the pipe unit

The cleaning of the heat exchanger and the pipe unit is very important to ensure constantly high performance and heat yield of the stove, as ensured by MCZ.

It is therefore advisable to:

Every 30 days, with the stove cold, clean the inner walls of the steel firebox, especially the back, with a scraper, to eliminate encrustations caused by soot. Incrustations act as insulation. The thicker they are, the less heat is transferred to the water and the structure in general.

Every 7 days and with the stove cold clean the internal pipe unit. To do this, use slight force on the handle located behind the door above the fire door (behind the upper front ceramic). Push and pull the handle 5-6 times so that the internal scraper removes the soot deposited on the pipes. *Figure 5*

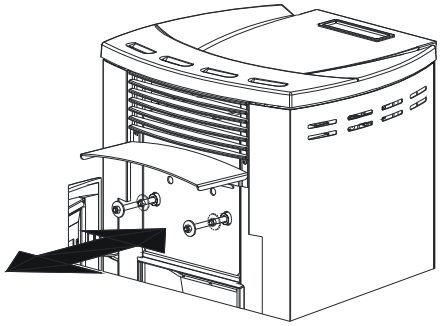

Figure 5 - Cleaning of internal pipe unit with scraper

Constant cleaning of the pipe unit prevents incrustations on it, and keeps the cleaning device from clogging and jamming.

5.1.5. Cleaning of stainless steel and satin-finish surfaces

Normally these surfaces do not need to be treated, but if they do, avoid cleaning them with abrasive materials. For surfaces in stainless and satin brushed steel we recommend cleaning with a paper towel or a clean dry cloth moistened with a detergent based on non-ionic surfactants (< 5%). A spray glass cleaner may be used.

5.1.6. Cleaning of painted parts

Do not clean the painted parts with wet rags when the unit is in operation or hot to prevent thermal shock to the paint which may cause it to detach. Do not use abrasive or aggressive products or materials.

Clean with damp cotton or paper towels.

The silicon paints used on MCZ products possess technical characteristics that make them resistant to very high temperatures.

There is however a physical limit (380°-400°) beyond which the paint begins to fade or (over 450°) to vitrify; it may then flake and detach from the steel surface.

If this happens, it means that temperatures have been reached that are far above those at which the unit should operate properly.

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5.2. CLEANING TO BE PERFORMED BY SPECIALIZED TECHNICIAN

5.2.1. Cleaning of the heat exchanger

With the stove cold, remove the upper side ceramics in majolica to access the cleaning plugs of the heat exchanger. Open the upper plugs (*Figure 6)* Using a stiff rod or a bottle brush, scrape the inner walls of the fire box so that the ashes drop into the part below.

Still with the stove cold, open the lower door of the ash compartment, extract the ash drawer, behind which the large cleaning plug is located (*Figure 7*). Open this plug as well. With a vacuum cleaner, remove all ash and soot which has built up in the heat exchanger and in the smoke extraction fan.

Clean the smoke discharge system, especially in the area of the tee connectors and of any horizontal stretches of pipe.

For information refer to a chimney sweep.

ATTENTION: for your safety, the frequency of cleaning the smoke discharge system must be determined on the basis of the use you make of the stove.

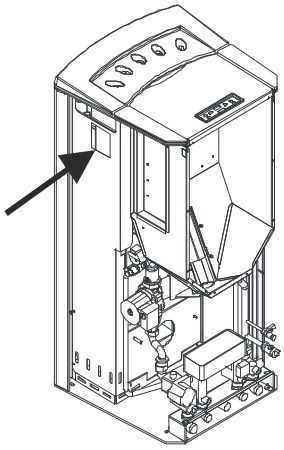

Figure 6 – Lateral plugs for internal cleaning

Check the seal of the ceramic fibre gaskets on the door of the stove.

If necessary order new gaskets from your dealer as replacements.

At the end of the season it is necessary to clean the compartment under the grate and the heat exchanger inside it.

This general cleaning should be carried out at the end of the season in order to facilitate the general removal of all residues of combustion, without waiting too long, because with time and humidity these residues can become compacted.

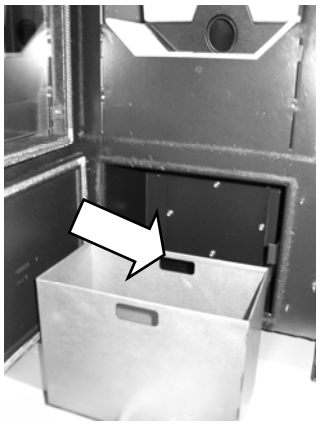

Figure 7 – Lower plug

5.2.2. Shutting the stove down (end of season)

In the period when the stove is out of use it must be disconnected from the electricity mains. For greater safety, especially if there are children around, we recommend removing the power cable from the rear of the stove. *(Figure 8)*

Before placing the stove in storage, you should remove all pellets from the hopper with a vacuum cleaner with a long extension. If the fuel is left in the hopper, it may get damp, stick together, and be difficult to light at the beginning of the next season

If the stove is removed form its place of installation **it MUST be placed in a location that is protected from atmospheric agents.**

If pressing the main switch (located on the back of the stove) does not make the control panel display light up, it could mean that the service fuse needs replacing.

Figure 8 – Disconnect the stove from the electrical mains

ATTENTION!
Disconnect the electrical cable.

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On the rear of the stove there is a fuse holding compartment which is located underneath the supply socket. With a screwdriver open the cover of the fuse holding compartment, and replace the fuse if necessary (3.15 AT delayed type). *Figure 9*

Plug the unit back in and press the main switch.

If the problem persists or occurs again, contact your MCZ retailer.

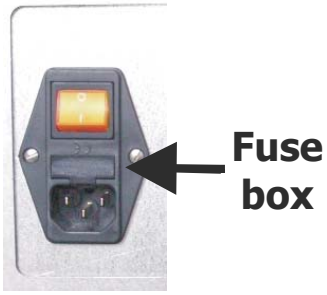

Figure 9 – Switch with fuse box

5.3. CHECK OF INTERNAL COMPONENTS

ATTENTION!

The check of the internal electromechanical components must be carried out only by qualified personnel with technical knowledge of electricity and combustion. If necessary, contact authorized MCZ retailers.

We recommend that an annual maintenance service is carried out, preferably under a programmed service contract. The essential part of this service is a visual and functional check on the following components:

- Reduction motor
- Smoke expulsion fan
- Smoke sensor
- Heat-exchanger fan
- Ignition sparkplug
- Resettable pellet thermostat
- Room temperature sensor
- Pressure switch
- Motherboard / service card
- Fuses protecting panel - motherboard - services card
- Wiring

The following is a summary of the checks and/or maintenance tasks which are indispensable for the correct operation of the stove.

Parts / interval	Every day	Every 2-3 days	Every 30 days	Every 60-90 days	Every 1 year
Burner	●				
Ash drawer		●			
Glass		●			
Lower exchanger			●		
Complete exchanger				●	
Smoke duct			●		
Ash drawer door gasket				●	
Internal parts					●
Flue pipe					●
Circulation pump					●
Plate heat exchanger					●
Plumbing components					●
Electro-mechanical components					●

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6. PROBLEMS / CAUSES / SOLUTIONS

ATTENTION: All repairs must be carried out exclusively by a specialised technician, with the stove completely cold and the electric plug pulled out.

PROBLEM	POSSIBLE CAUSES	REMEDY
Pellets not being fed into the combustion chamber.	1. Pellet hopper empty. 2. Screw feed blocked. 3. Reducing motor for screw feed faulty. 4. Defective electronic board.	1. Refill pellet hopper. 2. Empty the hopper and free the feed screw. *3. Replace reduction motor.* *4. Replace electronic board.*
The fire goes out or the stove stops automatically.	1. Pellet hopper empty. 2. Pellets not being fed in. 3. Intervention of pellet temperature sensor. 4. Door not closed properly or gaskets worn. 5. Unsuitable pellets. 6. Low pellet feed rate. 7. Combustion chamber dirty. 8. Smoke outlet obstructed. 9. Pressure switch broken or defective. 10. Smoke extraction motor failed.	1. Refill pellet hopper. 2. See previous problem.. 3. Let the stove cool down completely, reset the thermostat till lockout ceases, relight stove; if problem persists, contact technical assistance. 4. Close the door *or replace the gaskets with original spare parts*. 5. Change to a type of pellet recommended by the manufacturer. 6. Check the recipe and the calibration. 7. Clean the combustion chamber, following instructions in the manual. 8. Clean the smoke duct. *9. Replace the pressure switch.* *10. Check the motor and replace if necessary.*
The stove runs for a few minutes and then goes out.	1. Lighting cycle not completed. 2. Temporary failure of electricity supply. 3. Smoke duct obstructed. 4. Temperature sensors defective or broken. 5. Sparkplug failure.	1. Re-run lighting cycle. 2. See previous instruction. 3. Clean smoke duct. *4. Check and replace sensors as necessary.* *5. Check and replace sparkplug if necessary.*
Pellets build up in grate, door glass gets dirty and flame is weak.	1. Insufficient combustion air. 2. Pellets damp or unsuitable. 3. Smoke extractor motor broken.	1. Clean the grate and check that all the airways are clear. Carry out a general cleaning of the combustion chamber and the smoke duct. Check that the entry of air is not obstructed. Check the state of the door gaskets. 2. Change the type of pellet. *3. Check the motor and replace if necessary.*

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PROBLEM	POSSIBLE CAUSES	REMEDY
The smoke extraction motor does not work.	1. No electrical supply to the stove. 2. The motor is broken. 3. Defective motherboard. 4. Control panel broken.	1. Check the supply voltage and the protection fuse. *2. Check the motor and capacitor and replace if necessary.* *3. Replace electronic board.* *4. Replace the control panel.*
The convection air fan runs continuously.	1. Temperature sensor defective or broken. 2. Fan broken. 3. Silencer card of fan defective	*1.* Check the operation of the sensor *and replace if necessary.* *2.* Check the operation of the motor *and replace if necessary.* *3. Replace silencer card*
In the automatic position the stove always runs at full power.	1. Thermostat set to minimum 2. Room thermostat in position that always detects cold. 3. Temperature sensor defective. 4. Control panel defective or broken.	1. Reset the thermostat temperature. 2. Change the position of the probe *3. Check the operation of the sensor and replace if necessary.* 4. *Check the panel and replace if necessary.*
The stove does not run	1. Lack of electricity supply. 2. Pellet sensor in lockout. 3. Fuse blown. 4. Pressure switch broken (lockout indicated). 5. Smoke outlet or duct blocked.	1. Check that the electric socket is plugged in and that the main switch is in position "I". 2. *Clear lockout by resetting the rear thermostat,* replace the thermostat if it happens again. 3. Replace the fuse. 4. Replace the pressure switch. 5. Clean the smoke outlet and/or smoke duct.

ANOMALIES RELATED TO THE PLUMBING CIRCUIT

PROBLEM	POSSIBLE CAUSES	REMEDY
No increase in temperature with stove in operation	1. Incorrect combustion adjustment. 2. Boiler / system dirty. 3. Insufficient stove power. 4. Poor pellet quality	1. Check recipe and parameters. 2. Check and clean the boiler. 3. Check that the stove is properly sized for the requirements of the system. 4. Use MCZ pellets
Condensation in boiler	1. Incorrect temperature setting. 2. Insufficient fuel consumption.	*1. Set the stove to a higher temperature.* *2. Check the recipe and/or technical parameters.*

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PROBLEM	POSSIBLE CAUSES	REMEDY
Radiators cold in winter	1. Room thermostat (local or remote) set too low. If remote thermostat, check if it is defective. 2. Circulator does not run because blocked. 3. Circulator does not run. 4. Radiators have air in them	*1. Set to higher temperature or replace. (if remote)* *2. Free up the circulator by removing the plug and turning the shaft with a screwdriver.* *3. Check the electrical connections of the circulator; replace if necessary.* *4. Vent the radiators*
High variability of temperature of domestic hot water	1. Water flow rate too low.	*1. Increase the water flow rate (minimum 3 litres per minute)*
Little domestic hot water is provided	1. Insufficient mains pressure 2. Tap or mixer clogged with limescale 3. Water group clogged	*1. Check the calibration of the pressure reducer.* *2. Install and autoclave* *3. Check and clean* *4. Clean or replace the plate heat exchanger*
Hot water is not provided	1. Circulator (pump) blocked	*1. Free the circulator (pump)*

ATTENTION!

The operations *in italics* **must be carried out by specialised MCZ personnel.**

The manufacturer refuses to accept any responsibility and the guarantee lapses if this condition is not respected.

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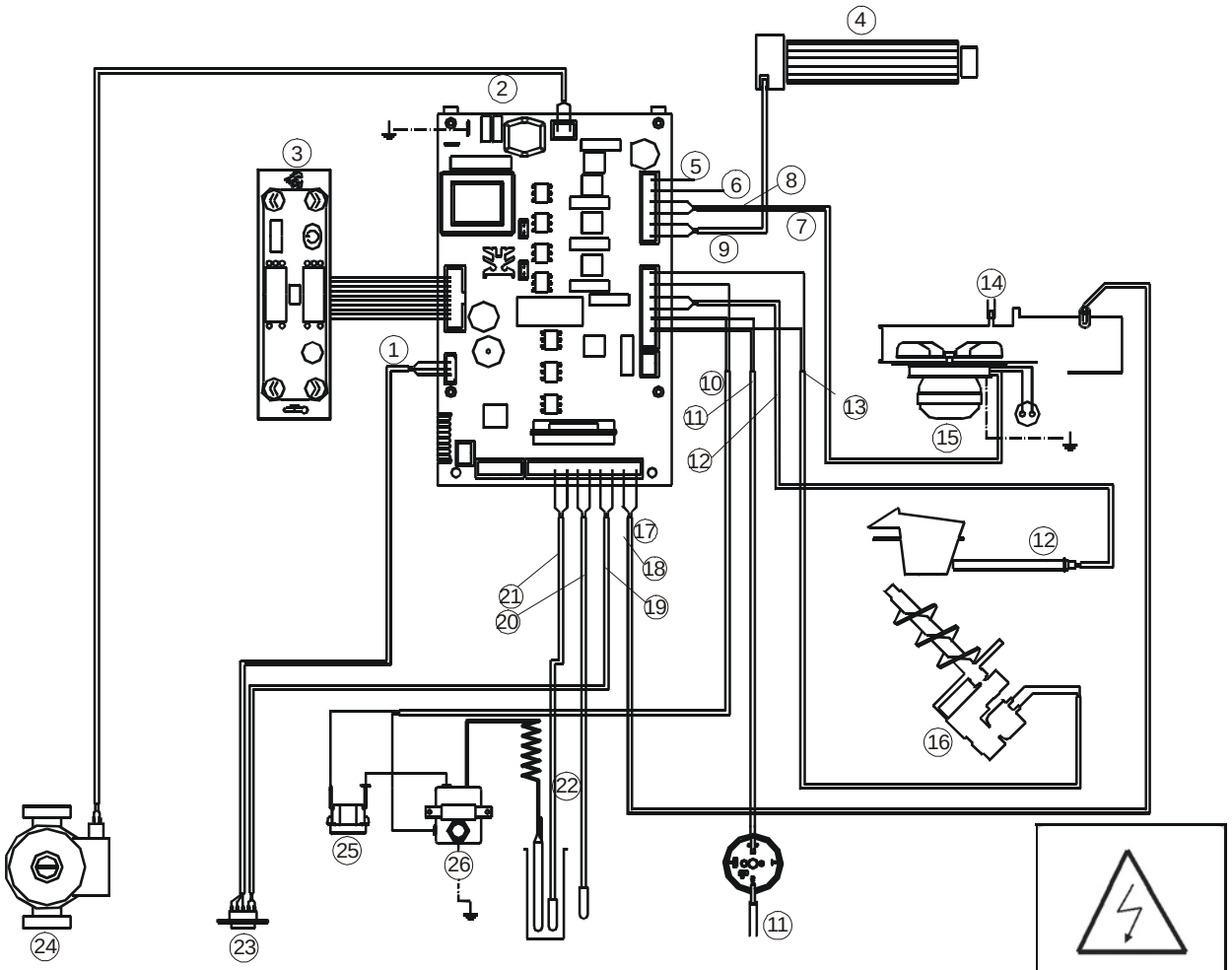
7. ELECTRICAL DIAGRAMS

7.1. ELECTRICAL DIAGRAM OF POLAR-NOVA-ATHOS POWER Hydro WITH NO DOMESTIC HOT WATER KIT



LIVE ELECTRICAL CABLES

DISCONNECT THE 230 V POWER SUPPLY PRIOR TO CARRYING OUT ANY ACTION ON THE ELECTRONIC CARDS

1. PROGRAMMING
2. MOTHERBOARD
3. CONSOLE
4. WARM AIR FAN
5. NEUTRAL
6. ABOUT 230V
7. PHASE
8. SMOKE FAN
9. EXCHANGER
10. RESETTABLE PELLET SAFETY
11. PRESSURE SWITCH
12. SPARKPLUG
13. FEED SCREW
14. SMOKE SENSOR
15. SMOKE EXHAUST FAN
16. GEARMOTOR
17. SMOKE SENSOR RED +
18. BLUE -
19. EXTERNAL THERMOSTAT
20. ROOM TEMPERATURE SENSOR
21. H2O PROBE
22. TEMPERATURE PROBE
23. SERIAL CONNECTOR
24. PUMP
25. KLIXON
26. BULB THERMOSTAT

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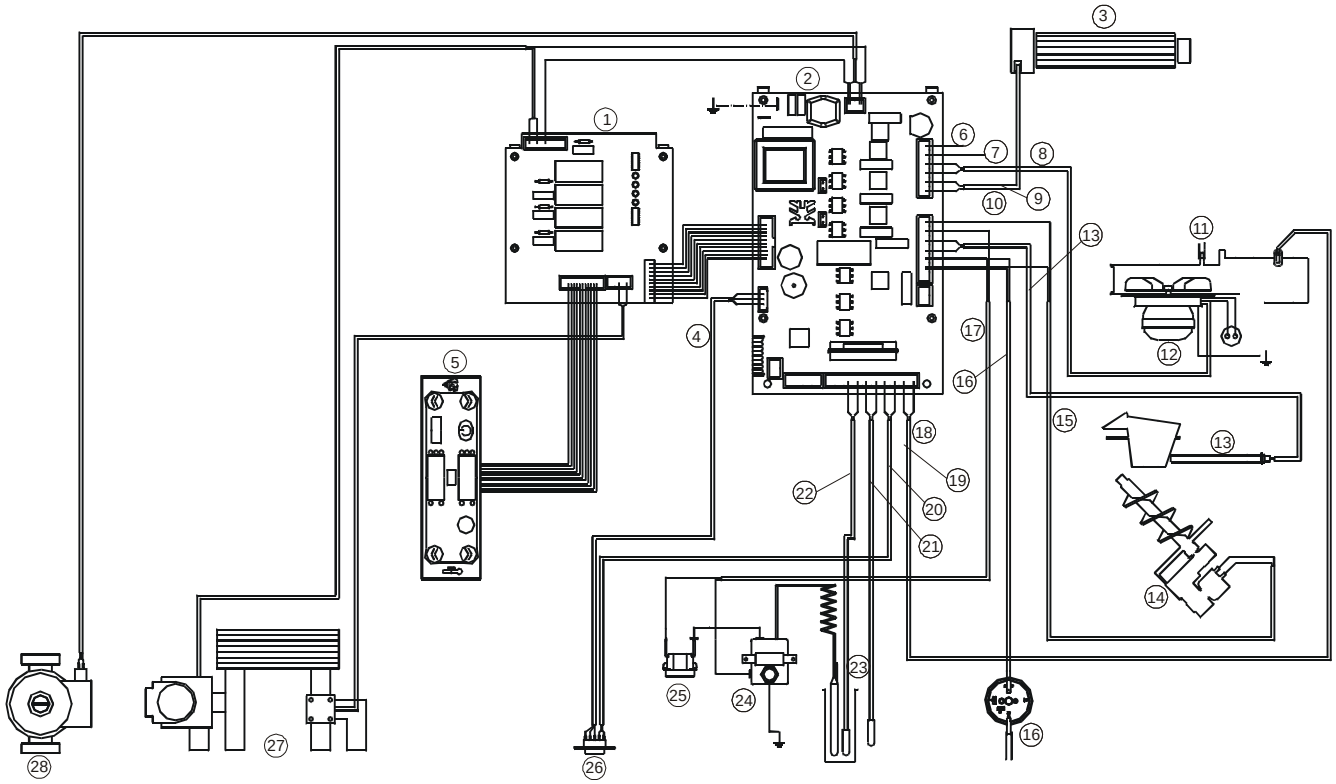
7.2. ELECTRICAL DIAGRAM OF POLAR-NOVA-ATHOS POWER Hydro WITH DOMESTIC HOT WATER KIT



LIVE ELECTRICAL CABLES

DISCONNECT THE 230 V POWER SUPPLY PRIOR TO CARRYING OUT ANY ACTION ON THE ELECTRONIC CARDS

1. SERVICES CARD
2. MOTHERBOARD
3. WARM AIR FAN
4. PROGRAMMING
5. CONSOLE
6. NEUTRAL
7. ABOUT 230V
8. PHASE
9. SMOKE FAN
10. EXCHANGER
11. SMOKE SENSOR
12. SMOKE EXHAUST FAN
13. SPARKPLUG
14. GEARMOTOR
15. FEED SCREW
16. PRESSURE SWITCH
17. RESETTABLE PELLET SAFETY
18. SMOKE SENSOR RED +
19. BLUE -
20. EXTERNAL THERMOSTAT
21. ROOM TEMPERATURE SENSOR
22. H2O PROBE
23. TEMPERATURE PROBE
24. BULB THERMOSTAT
25. KLIXON
26. SERIAL CONNECTOR
27. DOMESTIC WATER KIT
28. PUMP

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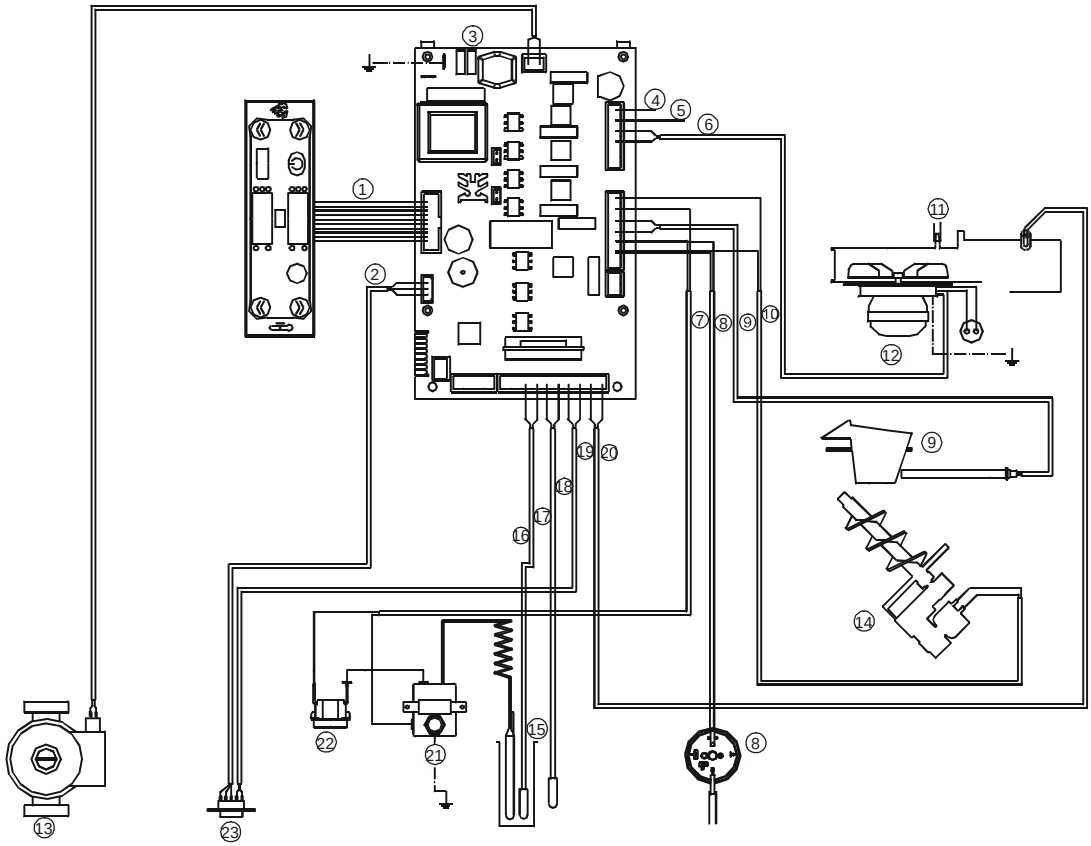
7.3. WIRING DIAGRAM for ATHOS Hydro without DOMESTIC HOT WATER KIT



LIVE ELECTRICAL CABLES

DISCONNECT THE 230 V POWER SUPPLY PRIOR TO CARRYING OUT ANY ACTION ON THE ELECTRONIC CARDS

1. CONSOLE
2. PROGRAMMING
3. MOTHERBOARD
4. NEUTRAL
5. ABOUT 230V
6. PHASE
7. RESETTABLE PELLET SAFETY
8. PRESSURE SWITCH
9. SPARKPLUG
10. FEED SCREW
11. SMOKE SENSOR
12. SMOKE EXHAUST FAN
13. PUMP
14. GEARMOTOR
15. TEMPERATURE PROBE
16. H2O PROBE
17. ROOM TEMPERATURE SENSOR
18. EXTERNAL THERMOSTAT
19. BLUE -
20. SMOKE SENSOR RED +
21. BULB THERMOSTAT
22. KLIXON
23. SERIAL CONNECTOR

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